



## Clinical trial results:

**Prospective, randomised, open label, multicentre Phase II clinical trial to investigate the efficacy and safety of the treatment of large defects (4-10 cm<sup>2</sup>) with 3 different doses of the autologous chondrocyte transplantation product co.don chondrosphere® (ACT3D-CS) in subjects with cartilage defects of the knee**

## Summary

EudraCT number	2009-016816-20
Trial protocol	DE
Global end of trial date	31 March 2018

## Results information

Result version number	v1 (current)
This version publication date	13 November 2019
First version publication date	13 November 2019
Summary attachment (see zip file)	cod16 HS14 Study Synopsis (Synopsis_cod_16_HS_14_study_report_FU60_eudract.pdf)

## Trial information

### Trial identification

Sponsor protocol code	cod16HS14
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### Additional study identifiers

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

Notes:

## Sponsors

Sponsor organisation name	co.don AG
Sponsor organisation address	Warthestr. 21, Teltow, Germany, 14513
Public contact	co.don AG, co.don AG, 0049 30240352361, i.oefler@codon.de
Scientific contact	co.don AG, co.don AG, 0049 30240352361, i.oefler@codon.de

Notes:

## Paediatric regulatory details

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

Notes:

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**Results analysis stage**

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Analysis stage	Final
Date of interim/final analysis	12 October 2018
Is this the analysis of the primary completion data?	No
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Global end of trial reached?	Yes
Global end of trial date	31 March 2018
Was the trial ended prematurely?	No

Notes:

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**General information about the trial**

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Main objective of the trial:

General Objectives:

Assessment of the short-term and long-term efficacy and safety of 3 different doses of the three-dimensional autologous chondrocyte transplantation product ACT3D-CS for the treatment of cartilage defects ( $\geq 4$ -10 cm<sup>2</sup>) of knee joints.

The health economic outcomes are mainly intended to be assessed and evaluated as a basis for future negotiations with health insurances, health care providers and development of newly implemented procedural codes within the German DRG (Diagnosis Related Groups) system for ACT3D-CS.

Health economic data within the phase II study will be collected and assessed, where different doses of ACT3D-CS will be applied.

Primary Objectives:

Change of overall KOOS (Knee Injury and Osteoarthritis Outcome Score) from baseline (Day 0) to final assessment (FA) at 12 months after transplantation determined for each dosage group and between the dosage groups

Protection of trial subjects:

In case of pain, patient agreed only to use paracetamol mono- (maximum 4 g/day) or a combination preparation and oral and/or topical NSAIDs during the trial and to discontinue the use of oral and/or topical NSAIDs and/or paracetamol combination preparation 1 week before each visit (whereby the use of paracetamol mono-preparation, maximum 4 g/day was allowed). However, in the morning of the visit day, no pain medication was allowed. Other pain medications were allowed during the surgical procedure and could be taken for a period not exceeding 4 weeks after surgery.

Any illness of the patient present at the time of enrolment into the trial was considered as concomitant illness and documented in the Concomitant Illness & Medication/Measure Form of the eCRFs containing the following:

- Concomitant illness
- Medication/Measure
- Medication form
- Dosing/Frequency
- Start date
- Stop date

Every concomitant illness (except for those constituting exclusion criteria as defined in Section 9.3.2) was examined before the patient's enrolment into the trial and treated with an appropriate medication/measure if necessary. Any illness emerging during the course of the trial was to be regarded as an adverse event (see Section 9.5.1.3.1).

All illnesses and any surgical treatment of the patient and medications taken / measures performed during the six months before enrolment into the trial were also to be documented in the Concomitant Illness & Medication/Measure Form.

Any medication/measure (including over-the-counter medication, multi-vitamin or nutritional supplement) taken by the patient or prescribed during the trial was to be recorded in the Concomitant Illness & Medication/Measure Form of the eCRFs.

Background therapy: -

Evidence for comparator: -

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Actual start date of recruitment	03 October 2011
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

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## Population of trial subjects

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### Subjects enrolled per country

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Country: Number of subjects enrolled	Germany: 75
Worldwide total number of subjects	75
EEA total number of subjects	75

Notes:

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### Subjects enrolled per age group

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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)	75
From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Recruitment took place from October 2010 to December 2014 in the participating centers.

### Pre-assignment

Screening details:

All patients with cartilage defects consulting the investigator during the recruitment phase of this clinical trial were informed of the trial. Patients who were interested in study participation, and had carefully read the Patient Information and signed and dated the Patient Informed Consent form, were screened for eligibility.

### Period 1

Period 1 title	Day before arthroscopy
Is this the baseline period?	Yes
Allocation method	Not applicable
Blinding used	Not blinded

### Arms

Arm title	Enrolled Patients
Arm description: -	
Arm type	Arthroscopy for biopsy
Investigational medicinal product name	Spherox implantation suspension
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution and suspension for suspension for injection in pre-filled syringe
Routes of administration	Intraarticular use

Dosage and administration details:

Arthroscopy for cartilage biopsy

Number of subjects in period 1	Enrolled Patients
Started	75
Completed	75

### Period 2

Period 2 title	overall trial
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Single blind
Roles blinded	Subject

## Arms

Are arms mutually exclusive?	Yes
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<b>Arm title</b>	Group A
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### Arm description:

Patients with defect sizes between  $\geq 4$  cm<sup>2</sup> and 10 cm<sup>2</sup> were assigned to autologous chondrocyte implantation with three different dose levels of the three-dimensional product chondrosphere:

Group A: chondrosphere, 3–7 spheroids/cm<sup>2</sup>

Arm type	Experimental
Investigational medicinal product name	Spherox implantation suspension
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution and suspension for suspension for injection in pre-filled syringe
Routes of administration	Intraarticular use

### Dosage and administration details:

Once: arthroscopic administration of a dose of 3-7 spheroids per square cm

<b>Arm title</b>	Group B
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### Arm description:

Patients with defect sizes between  $\geq 4$  cm<sup>2</sup> and 10 cm<sup>2</sup> were assigned to autologous chondrocyte implantation with three different dose levels of the three-dimensional product chondrosphere:

Group B: chondrosphere, 10–30 spheroids/cm<sup>2</sup>

Arm type	Experimental
Investigational medicinal product name	Spherox implantation suspension
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution and suspension for suspension for injection in pre-filled syringe
Routes of administration	Intraarticular use

### Dosage and administration details:

Once: arthroscopic administration of 10-30 spheroids per square cm

<b>Arm title</b>	Group C
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### Arm description:

Patients with defect sizes between  $\geq 4$  cm<sup>2</sup> and 10 cm<sup>2</sup> were assigned to autologous chondrocyte implantation with three different dose levels of the three-dimensional product chondrosphere:

Group C: chondrosphere, 40–70 spheroids/cm<sup>2</sup>

Arm type	Experimental
Investigational medicinal product name	Spherox implantation suspension
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution and suspension for suspension for injection in pre-filled syringe
Routes of administration	Intraarticular use

### Dosage and administration details:

Once: arthroscopic administration of 40-70 spheroids per square cm

<b>Number of subjects in period 2</b>	Group A	Group B	Group C
Started	25	25	25
Completed	17	20	11
Not completed	8	5	14
Consent withdrawn by subject	2	2	3
Physician decision	-	-	1
Adverse event, non-fatal	-	-	2
Pregnancy	1	1	1
Preexisting bone cyst worsening	1	-	-
Lost to follow-up	3	2	4
Protocol deviation	1	-	3

## Baseline characteristics

## End points

### End points reporting groups

Reporting group title	Enrolled Patients
Reporting group description: -	
Reporting group title	Group A
Reporting group description: Patients with defect sizes between $\geq 4$ cm <sup>2</sup> and 10 cm <sup>2</sup> were assigned to autologous chondrocyte implantation with three different dose levels of the three-dimensional product chondrosphere: Group A: chondrosphere, 3–7 spheroids/cm <sup>2</sup>	
Reporting group title	Group B
Reporting group description: Patients with defect sizes between $\geq 4$ cm <sup>2</sup> and 10 cm <sup>2</sup> were assigned to autologous chondrocyte implantation with three different dose levels of the three-dimensional product chondrosphere: Group B: chondrosphere, 10–30 spheroids/cm <sup>2</sup>	
Reporting group title	Group C
Reporting group description: Patients with defect sizes between $\geq 4$ cm <sup>2</sup> and 10 cm <sup>2</sup> were assigned to autologous chondrocyte implantation with three different dose levels of the three-dimensional product chondrosphere: Group C: chondrosphere, 40–70 spheroids/cm <sup>2</sup>	

### Primary: Overall KOOS

End point title	Overall KOOS
End point description:	
End point type	Primary
End point timeframe: baseline (Day 0) and 6 weeks, 3 months, 6 months, 12 months (final assessment) and follow-up Visits 5–9 (18, 24, 36, 48 and 60 months) after implantation	

End point values	Group A	Group B	Group C	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	23 <sup>[1]</sup>	25	24 <sup>[2]</sup>	
Units: 0-100	23	25	24	

Notes:

[1] - 1 patient not treated due to insufficient cell growth, 1 patient did not complete KOOS at baseline

[2] - 1 patient was not treated due to insufficient cell growth

<b>Attachments (see zip file)</b>	Overall KOOS and change in overall
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### Statistical analyses

<b>Statistical analysis title</b>	Primary Efficacy Data for ITT-Population
Comparison groups	Group B v Group A v Group C



Number of subjects included in analysis	72
Analysis specification	Pre-specified
Analysis type	superiority <sup>[3]</sup>
P-value	≤ 0.05 <sup>[4]</sup>
Method	t-test, 2-sided

Notes:

[3] - The change of overall KOOS (Knee Injury and Osteoarthritis Outcome Score) at 12 months from baseline (Day 0) was tested statistically for all three dose groups by applying the principle of ordered hypotheses. The statistical hypothesis per dose group was equality of the overall KOOS at 12 months compared with baseline versus the alternative of superiority.

[4] - The null hypothesis to be tested in the primary analysis was:

H0: delta = KOOSV12 - KOOSBase = 0

It was to be rejected if  $p < \text{or } = \alpha = 0.05$  in a one-sample, two-sided t test (for details see Section 6.4.1 of the SAP).

### Secondary: KOOS Subscores

End point title	KOOS Subscores
End point description:	
End point type	Secondary
End point timeframe:	
At baseline and 6 weeks, 3, 12, 18, 36, 48 and 60 months after treatment	

End point values	Group A	Group B	Group C	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	24	25	24	
Units: 0-100	24	25	24	

<b>Attachments (see zip file)</b>	Table of KOOS subscores/Tables_KOOS_subscores.pdf
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### Statistical analyses

No statistical analyses for this end point

### Secondary: MOCART

End point title	MOCART
End point description:	
End point type	Secondary
End point timeframe:	
after 3, 12, 18, 24, 36, 48 and 60 months	

End point values	Group A	Group B	Group C	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	20	19	19	
Units: 0-100	20	19	19	

<b>Attachments (see zip file)</b>	MOCART Scores Table/MOCART_table.pdf
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### Statistical analyses

No statistical analyses for this end point

### Secondary: Bern Score

End point title	Bern Score
End point description:	
End point type	Secondary
End point timeframe: at 12 months	

End point values	Group A	Group B	Group C	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	5	1	1	
Units: 0-9	5	1	1	

<b>Attachments (see zip file)</b>	Bern Scores Table/Bern_Table.pdf
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### Statistical analyses

No statistical analyses for this end point

### Secondary: modified Lysholm score

End point title	modified Lysholm score
End point description:	
End point type	Secondary
End point timeframe: at baseline and at all time points: 6 weeks, 3, 6, 12 months (final assessment) and follow-up: 18, 24, 36, 48, 60 months after transplantation	

<b>End point values</b>	Group A	Group B	Group C	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	24	25	24	
Units: 0-24	24	25	24	

<b>Attachments (see zip file)</b>	modified Lysholm Table/Lysholm_Table.pdf
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### Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

from baseline to 60 months follow up

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	Group A
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Reporting group description:

Low-dose group receiving 3-7 spheroids per square cm defect size: Safety analyses and assessments were conducted with all patients treated (safety population, with N = 25 in each of the three treatment groups. According to the study protocol, each patient was to receive a single dose of chondrosphere. In fact two patients did not receive any chondrosphere, but did undergo arthroscopy; the latter was a study-specific procedure and these two patients are therefore included in the safety population and in all safety analyses except where a statement to the contrary is made.

Reporting group title	Group B
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Reporting group description:

Low-dose group receiving 10-30 spheroids per square cm defect size: Safety analyses and assessments were conducted with all patients treated (safety population, with N = 25 in each of the three treatment groups. According to the study protocol, each patient was to receive a single dose of chondrosphere. In fact two patients did not receive any chondrosphere, but did undergo arthroscopy; the latter was a study-specific procedure and these two patients are therefore included in the safety population and in all safety analyses except where a statement to the contrary is made.

Reporting group title	Group C
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Reporting group description:

Low-dose group receiving 40-70 spheroids per square cm defect size: Safety analyses and assessments were conducted with all patients treated (safety population, with N = 25 in each of the three treatment groups. According to the study protocol, each patient was to receive a single dose of chondrosphere. In fact two patients did not receive any chondrosphere, but did undergo arthroscopy; the latter was a study-specific procedure and these two patients are therefore included in the safety population and in all safety analyses except where a statement to the contrary is made.

Serious adverse events	Group A	Group B	Group C
Total subjects affected by serious adverse events			
subjects affected / exposed	7 / 25 (28.00%)	5 / 25 (20.00%)	8 / 25 (32.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events			
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Bladder cancer			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Injury, poisoning and procedural			

complications			
Meniscus injury			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Optic nerve injury			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Patella fracture			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	1 / 25 (4.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Skull fracture			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Subdural haematoma			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Cardiac disorders			
Angina pectoris			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Myocarditis			
alternative dictionary used: MedDRA 21			

subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Syncope			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	1 / 25 (4.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Surgical and medical procedures			
Cartilage graft			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Nervous system disorders			
Cerebrovascular accident			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Convulsion			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gastrointestinal disorders			
Anal prolapse			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Haemorrhoids			
alternative dictionary used: MedDRA 21			

subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Umbilical hernia			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Reproductive system and breast disorders			
Uterine cyst			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Musculoskeletal and connective tissue disorders			
Chondropathy			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	2 / 25 (8.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 2	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Chondromalacia			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	2 / 25 (8.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 2
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Arthralgia			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	1 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Cartilage hypertrophy			
alternative dictionary used: MedDRA 21			

subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	1 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Chondrocalcinosis			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Extraskeletal ossification			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	1 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Intervertebral disc protrusion			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	1 / 25 (4.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Osteoarthritis			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Osteochondrosis			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	1 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Osteonecrosis			
alternative dictionary used: MedDRA 21			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	1 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0



Frequency threshold for reporting non-serious adverse events: 4 %

<b>Non-serious adverse events</b>	Group A	Group B	Group C
Total subjects affected by non-serious adverse events			
subjects affected / exposed	22 / 25 (88.00%)	24 / 25 (96.00%)	23 / 25 (92.00%)
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Skin papilloma			
subjects affected / exposed	0 / 25 (0.00%)	1 / 25 (4.00%)	0 / 25 (0.00%)
occurrences (all)	0	1	0
Soft tissue neoplasm			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Vascular disorders			
Hypertension			
subjects affected / exposed	0 / 25 (0.00%)	1 / 25 (4.00%)	1 / 25 (4.00%)
occurrences (all)	0	1	1
Deep vein thrombosis			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Lymphoedema			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences (all)	1	0	0
Thrombophlebitis			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Surgical and medical procedures			
Skin neoplasm excision			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Tooth extraction			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
General disorders and administration site conditions			
Pain			
subjects affected / exposed	1 / 25 (4.00%)	2 / 25 (8.00%)	0 / 25 (0.00%)
occurrences (all)	1	2	0

Adverse drug reaction subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Oedema peripheral subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Tenderness subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Immune system disorders Drug hypersensitivity subjects affected / exposed occurrences (all)	2 / 25 (8.00%) 2	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
House dust allergy subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Hypersensitivity subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Sarcoidosis subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Reproductive system and breast disorders Ovarian cyst subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Respiratory, thoracic and mediastinal disorders Rhinitis seasonal subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Tonsillar inflammation subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Psychiatric disorders Depression			

subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Investigations Blood cholesterol increased subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Injury, poisoning and procedural complications Ligament sprain subjects affected / exposed occurrences (all)	2 / 25 (8.00%) 2	3 / 25 (12.00%) 3	6 / 25 (24.00%) 7
Fall subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	2 / 25 (8.00%) 2	0 / 25 (0.00%) 0
Meniscus injury subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Rib fracture subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	2 / 25 (8.00%) 2
Contusion subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Hand fracture subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Laceration subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Ligament rupture subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Muscle strain subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Post concussion syndrome			

subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences (all)	1	0	0
Road traffic accident			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Scar			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences (all)	1	0	0
Upper limb fracture			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Wound dehiscence			
subjects affected / exposed	0 / 25 (0.00%)	1 / 25 (4.00%)	0 / 25 (0.00%)
occurrences (all)	0	1	0
Cardiac disorders			
Tachycardia			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences (all)	1	0	0
Nervous system disorders			
Headache			
subjects affected / exposed	3 / 25 (12.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	14	0	38
Aphasia			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Hyperaesthesia			
subjects affected / exposed	0 / 25 (0.00%)	1 / 25 (4.00%)	0 / 25 (0.00%)
occurrences (all)	0	1	0
Migraine			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Muscular weakness			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences (all)	1	0	0
Sciatica			

subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Blood and lymphatic system disorders Bone marrow oedema subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Ear and labyrinth disorders Inner ear inflammation subjects affected / exposed occurrences (all)  Sudden hearing loss subjects affected / exposed occurrences (all)  Tinnitus subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0  1 / 25 (4.00%) 1  0 / 25 (0.00%) 0	0 / 25 (0.00%) 0  0 / 25 (0.00%) 0  1 / 25 (4.00%) 1	1 / 25 (4.00%) 1  0 / 25 (0.00%) 0  0 / 25 (0.00%) 0
Gastrointestinal disorders Abdominal pain subjects affected / exposed occurrences (all)  Diarrhoea subjects affected / exposed occurrences (all)  Dysphagia subjects affected / exposed occurrences (all)  Gastrointestinal tract irritation subjects affected / exposed occurrences (all)  Gastrooesophageal reflux disease subjects affected / exposed occurrences (all)  Nausea subjects affected / exposed occurrences (all)  Vomiting	1 / 25 (4.00%) 1  0 / 25 (0.00%) 0  1 / 25 (4.00%) 1  0 / 25 (0.00%) 0  0 / 25 (0.00%) 0  1 / 25 (4.00%) 1  0 / 25 (0.00%) 0  1 / 25 (4.00%) 1	0 / 25 (0.00%) 0  1 / 25 (4.00%) 1  0 / 25 (0.00%) 0  0 / 25 (0.00%) 0  0 / 25 (0.00%) 0  0 / 25 (0.00%) 0	1 / 25 (4.00%) 2  1 / 25 (4.00%) 1  0 / 25 (0.00%) 0  1 / 25 (4.00%) 1  1 / 25 (4.00%) 1  0 / 25 (0.00%) 0

subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Skin and subcutaneous tissue disorders			
Psoriasis			
subjects affected / exposed	0 / 25 (0.00%)	1 / 25 (4.00%)	0 / 25 (0.00%)
occurrences (all)	0	1	0
Scar pain			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Renal and urinary disorders			
Renal cyst			
subjects affected / exposed	0 / 25 (0.00%)	0 / 25 (0.00%)	1 / 25 (4.00%)
occurrences (all)	0	0	1
Endocrine disorders			
Hypothyroidism			
subjects affected / exposed	1 / 25 (4.00%)	0 / 25 (0.00%)	0 / 25 (0.00%)
occurrences (all)	1	0	0
Musculoskeletal and connective tissue disorders			
Joint effusion			
subjects affected / exposed	17 / 25 (68.00%)	22 / 25 (88.00%)	20 / 25 (80.00%)
occurrences (all)	19	27	27
Arthralgia			
subjects affected / exposed	5 / 25 (20.00%)	7 / 25 (28.00%)	9 / 25 (36.00%)
occurrences (all)	11	8	12
Joint swelling			
subjects affected / exposed	5 / 25 (20.00%)	5 / 25 (20.00%)	1 / 25 (4.00%)
occurrences (all)	6	5	2
Back pain			
subjects affected / exposed	2 / 25 (8.00%)	1 / 25 (4.00%)	3 / 25 (12.00%)
occurrences (all)	2	1	3
Joint noise			
subjects affected / exposed	0 / 25 (0.00%)	4 / 25 (16.00%)	2 / 25 (8.00%)
occurrences (all)	0	4	2
Tendonitis			
subjects affected / exposed	1 / 25 (4.00%)	1 / 25 (4.00%)	2 / 25 (8.00%)
occurrences (all)	2	1	2

Intervertebral disc protrusion subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Patellofemoral pain syndrome subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	1 / 25 (4.00%) 1	1 / 25 (4.00%) 1
Joint lock subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	2 / 25 (8.00%) 2	0 / 25 (0.00%) 0
Muscular weakness subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 2	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Musculoskeletal pain subjects affected / exposed occurrences (all)	2 / 25 (8.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Myalgia subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	2 / 25 (8.00%) 2
Osteoarthritis subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Bone cyst subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Bone pain subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Ligament disorder subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Muscle atrophy subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Sacroiliitis subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1

Infections and infestations Nasopharyngitis subjects affected / exposed occurrences (all)	3 / 25 (12.00%) 3	6 / 25 (24.00%) 7	2 / 25 (8.00%) 7
Tonsillitis subjects affected / exposed occurrences (all)	2 / 25 (8.00%) 3	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Gastrointestinal infection subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	1 / 25 (4.00%) 1
Respiratory tract infection subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	2 / 25 (8.00%) 2	0 / 25 (0.00%) 0
Borrelia infection subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Bronchitis subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Ear infection subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Gastroenteritis subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Influenza subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Laryngitis subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Rhinitis subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0
Tooth infection			



subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Metabolism and nutrition disorders			
Hyperlipidaemia			
subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Hyperthyroidism			
subjects affected / exposed occurrences (all)	1 / 25 (4.00%) 1	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0
Type 2 diabetes mellitus			
subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 1
Vitamin D deficiency			
subjects affected / exposed occurrences (all)	0 / 25 (0.00%) 0	0 / 25 (0.00%) 0	1 / 25 (4.00%) 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