Clinical trial results:
A randomized, placebo-controlled, subject and investigator blinded study investigating the safety, tolerability and preliminary efficacy of 8-week treatment with intra-articular LRX712 to regenerate articular cartilage in patients with mild/moderate knee osteoarthritis

Summary

EudraCT number	2019-002963-92
Trial protocol	NL AT
Global end of trial date	17 January 2025

Results information

Result version number	v1 (current)
This version publication date	04 January 2026
First version publication date	04 January 2026

Trial information

Trial identification

Sponsor protocol code	CLRX712A12201

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT04097379
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Novartis Pharma AG
Sponsor organisation address	Lichtstrasse 35, Basel, Switzerland, 4056
Public contact	Clinical Disclosure Office, Novartis Pharma AG, 41 613241111, novartis.email@novartis.com
Scientific contact	Clinical Disclosure Office, Novartis Pharma AG, 41 613241111, novartis.email@novartis.com

Notes:

Paediatric regulatory details

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

Notes:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	17 January 2025
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	17 January 2025
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

The main purpose of this study was to explore the preliminary efficacy of LRX712 when administered as 3 consecutive intra-articularly injections at monthly intervals (i.e., an 8-week treatment period) by evaluating the ability of the drug to regenerate articular cartilage.

Protection of trial subjects:

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

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	20 July 2020
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: 45
Worldwide total number of subjects	45
EEA total number of subjects	45

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)	25
From 65 to 84 years	20
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

Participants took part in 1 investigative site in Netherlands.

Pre-assignment

Screening details:

This study had a 7-week screening period.

Period 1

Period 1 title	Overall Study (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?	Yes
Arm title	LRX712 15 mg

Arm description:

LRX712 15 mg was administered intra-articularly (i.a.) every four weeks, for a total of three administrations.

Arm type	Experimental
Investigational medicinal product name	LRX712
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Intraarticular use

Dosage and administration details:

LRX712 15 mg was administered intra-articularly (i.a.) every four weeks, for a total of three administrations.

Arm title	LRX712 25 mg

Arm description:

LRX712 25 mg was administered i.a. every four weeks, for a total of three administrations.

Arm type	Experimental
Investigational medicinal product name	LRX712
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Intraarticular use

Dosage and administration details:

LRX712 25 mg was administered i.a. every four weeks, for a total of three administrations.

Arm title	LRX712 75 mg

Arm description:

LRX712 75 mg was administered i.a. every four weeks, for a total of three administrations.

Arm type	Experimental

Investigational medicinal product name	LRX712
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Intraarticular use

Dosage and administration details:

LRX712 75 mg was administered i.a. every four weeks, for a total of three administrations.

Arm title	Placebo

Arm description:

Placebo was administered i.a. every four weeks, for a total of three administrations.

Arm type	Placebo
Investigational medicinal product name	Placebo
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intraarticular use

Dosage and administration details:

Placebo was administered i.a. every four weeks, for a total of three administrations.

Number of subjects in period 1	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg
Started	12	14	3
Completed	11	13	3
Not completed	1	1	0
Physician decision	-	1	-
Adverse event	1	-	-

Number of subjects in period 1	Placebo
Started	16
Completed	16
Not completed	0
Physician decision	-
Adverse event	-

Baseline characteristics

Reporting groups	
Reporting group title	LRX712 15 mg
Reporting group description:	
LRX712 15 mg was administered intra-articularly (i.a.) every four weeks, for a total of three administrations.	
Reporting group title	LRX712 25 mg
Reporting group description:	
LRX712 25 mg was administered i.a. every four weeks, for a total of three administrations.	
Reporting group title	LRX712 75 mg
Reporting group description:	
LRX712 75 mg was administered i.a. every four weeks, for a total of three administrations.	
Reporting group title	Placebo
Reporting group description:	
Placebo was administered i.a. every four weeks, for a total of three administrations.	

Reporting group values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg
Number of subjects	12	14	3
Age categorical Units: Subjects			
In utero	0	0	0
Preterm newborn infants (gestational age < 37 wks)	0	0	0
Newborns (0-27 days)	0	0	0
Infants and toddlers (28 days-23 months)	0	0	0
Children (2-11 years)	0	0	0
Adolescents (12-17 years)	0	0	0
Adults (18-64 years)	3	8	2
From 65-84 years	9	6	1
85 years and over	0	0	0
Age Continuous Units: years			
arithmetic mean	66.3	61.6	59.7
standard deviation	± 7.74	± 7.31	± 5.03
Sex: Female, Male Units: participants			
Female	5	7	1
Male	7	7	2
Race/Ethnicity, Customized Units: Subjects			
Asian	1	1	0
White	11	13	3

Reporting group values	Placebo	Total	
Number of subjects	16	45	

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)	12	25	
From 65-84 years	4	20	
85 years and over	0	0	
Age Continuous Units: years			
arithmetic mean	58.4		
standard deviation	± 8.66	-	
Sex: Female, Male Units: participants			
Female	7	20	
Male	9	25	
Race/Ethnicity, Customized Units: Subjects			
Asian	0	2	
White	16	43	

End points

End points reporting groups

Reporting group title	LRX712 15 mg
Reporting group description:	
LRX712 15 mg was administered intra-articularly (i.a.) every four weeks, for a total of three administrations.	
Reporting group title	LRX712 25 mg
Reporting group description:	
LRX712 25 mg was administered i.a. every four weeks, for a total of three administrations.	
Reporting group title	LRX712 75 mg
Reporting group description:	
LRX712 75 mg was administered i.a. every four weeks, for a total of three administrations.	
Reporting group title	Placebo
Reporting group description:	
Placebo was administered i.a. every four weeks, for a total of three administrations.	

Primary: Change from baseline in cartilage volume in the index region measured by 7 Tesla MRI at Week 28

End point title	Change from baseline in cartilage volume in the index region measured by 7 Tesla MRI at Week 28[1]
End point description:	
Magnetic resonance images (MRI) were obtained from the target knee to visualize and quantify changes in the volume of cartilage in the index region. The index region was defined as the combination of the femoral medial anterior (FMA), central (FMC) and posterior (FMP) cartilage subregions in the knee. Change from baseline in cartilage volume was analyzed using the mixed effects model for repeated measures (MMRM). The model included baseline, treatment, timepoint and treatment-timepoints as fixed effects, and participant as random effect. Missing data was assumed to be Missing at Random (MAR).	
End point type	Primary
End point timeframe:	
Baseline, Week 28	
Notes:	
[1] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period. Justification: The end point is specific for the arms presented.	

End point values	LRX712 15 mg	LRX712 25 mg	Placebo	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	13	16	
Units: µL				
least squares mean (standard error)	63.3 (± 54.93)	49.8 (± 50.57)	11.6 (± 45.54)	

Statistical analyses

Statistical analysis title	Cartilage volume
Comparison groups	LRX712 25 mg v Placebo

Number of subjects included in analysis	29
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.2892
Method	Mixed effects model for repeated measure
Parameter estimate	Least Square Mean
Point estimate	38.19
Confidence interval	
level	90 %
sides	2-sided
lower limit	-76.7
upper limit	153.1
Variability estimate	Standard error of the mean
Dispersion value	68.1

Statistical analysis title	Cartilage volume
Comparison groups	LRX712 15 mg v Placebo
Number of subjects included in analysis	27
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.2366
Method	Mixed effects model for repeated measure
Parameter estimate	Least Square Mean
Point estimate	51.7
Confidence interval	
level	90 %
sides	2-sided
lower limit	-68.7
upper limit	172.1
Variability estimate	Standard error of the mean
Dispersion value	71.327

Secondary: Time to Reach the Maximum Plasma Concentration (Tmax) of LRX712

End point title	Time to Reach the Maximum Plasma Concentration (Tmax) of LRX712[2]

End point description:

Tmax is the time to reach maximum (peak) LRX712 concentration after single-dose administration (time). LRX712 plasma concentrations were determined using the actual recorded sampling times and non-compartmental method with Phoenix WinNonlin (Version 8.3). LRX712 was determined by a validated LC-MS/MS method. Concentrations below the lower limit of quantification (LLOQ) were treated as "zero" . LLOQ was 25 pg/mL. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Pre-dose, 0.5, 12, 24 and 168 hours after dose on Day 1; Pre-dose, 24 and 168 hours after dose on Day 29; Pre-dose, 24, 168, 1344 and 3360 hours after dose on Day 57

Notes:

[2] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.
Justification: The end point is specific for the arms presented. Placebo is not applicable.

End point values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	12	14	3	
Units: hours				
median (full range (min-max))				
Day 1 (n=12,14,3)	17.5 (12.0 to 24.0)	23.3 (0.50 to 24.1)	24.0 (12.0 to 24.1)	
Day 29 (n=10,13,2)	23.8 (22.6 to 24.0)	24.0 (22.2 to 24.2)	23.9 (23.8 to 24.0)	
Day 57 (n=11,13,3)	24.0 (21.9 to 24.0)	24.0 (22.0 to 24.1)	24.0 (23.5 to 24.0)	

Statistical analyses

No statistical analyses for this end point

Secondary: Maximum Observed Plasma Concentration (Cmax) of LRX712

End point title	Maximum Observed Plasma Concentration (Cmax) of LRX712[3]

End point description:

Cmax is defined as the maximum (peak) observed concentration following a dose. LRX712 plasma concentrations were determined using the actual recorded sampling times and non-compartmental method with Phoenix WinNonlin (Version 8.3). LRX712 was determined by a validated LC-MS/MS method. Concentrations below the lower limit of quantification (LLOQ) were treated as "zero" . LLOQ was 25 pg/mL. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Pre-dose, 0.5, 12, 24 and 168 hours after dose on Day 1; Pre-dose, 24 and 168 hours after dose on Day 29; Pre-dose, 24, 168, 1344 and 3360 hours after dose on Day 57

Notes:

[3] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.
Justification: The end point is specific for the arms presented. Placebo is not applicable.

End point values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	12	14	3	
Units: ng/mL				
arithmetic mean (standard deviation)				
Day 1 (n=12,14,3)	3.52 (± 2.07)	6.54 (± 5.33)	6.94 (± 4.96)	
Day 29 (n=10,13,2)	3.33 (± 2.57)	3.50 (± 1.43)	27.0 (± 31.6)	
Day 57 (n=11,13,3)	2.39 (± 0.951)	4.05 (± 2.25)	29.5 (± 20.4)	

Statistical analyses

No statistical analyses for this end point

Secondary: Minimum Observed Plasma Concentration (Cmin) of LRX712

End point title	Minimum Observed Plasma Concentration (Cmin) of LRX712[4]

End point description:

Cmin is defined as the minimum (peak) observed concentration following a dose. LRX712 plasma concentrations were determined using the actual recorded sampling times and non-compartmental method with Phoenix WinNonlin (Version 8.3). LRX712 was determined by a validated LC-MS/MS method. Concentrations below the lower limit of quantification (LLOQ) were treated as "zero" . LLOQ was 25 pg/mL. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Pre-dose on Day 29; Pre-dose, 1344 hours after dose on Day 57 (LRX712 15 mg arm) and 3360 hours after dose on Day 57 (LRX712 25 mg and 75 mg arms)

Notes:

[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 is specific for the arms presented. Placebo is not applicable.

End point values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	14	3	
Units: ng/mL				
arithmetic mean (standard deviation)				
Dose 1 (pre-dose Day 29) (n=10,14,3)	0.0735 (± 0.10)	0.0823 (± 0.115)	0.231 (± 0.401)	
Dose 2 (pre-dose Day 57) (n=11,13,3)	0.111 (± 0.109)	0.202 (± 0.204)	0.365 (± 0.585)	
Dose 3 (post-dose Day 57) (n=10,12,3)	0.0439 (± 0.0740)	0.00379 (± 0.0131)	0.0120 (± 0.0208)	

Statistical analyses

No statistical analyses for this end point

Secondary: Synovial fluid concentrations of LRX712

End point title	Synovial fluid concentrations of LRX712[5]

End point description:

The observed synovial concentration following a dose. LRX712 concentrations were determined using the actual recorded sampling times and non-compartmental method with Phoenix WinNonlin (Version 8.3). LRX712 was determined by a validated LC-MS/MS method. Concentrations below the lower limit of quantification (LLOQ) were treated as "zero" . LLOQ was 20 ng/mL. Samples were collected from a limited number of participants. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Pre-dose on Day 1, 29 and 57

Notes:

[5] - 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 is specific for the arms presented. Placebo is not applicable.

End point values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	2	3	0[6]	
Units: ng/mL				
arithmetic mean (standard deviation)				
Day 1 (n=1,2,0)	0 (± 0)	0 (± 0)	()	
Day 29 (n=1,1,0)	0 (± 0)	0 (± 0)	()	
Day 57 (n=0,2,0)	0 (± 0)	0 (± 0)	()	

Notes:

[6] - The samples collected were outside the stability window.

Statistical analyses

No statistical analyses for this end point

Secondary: Time to Reach the Maximum Plasma Concentration (Tmax) of MAE344

End point title	Time to Reach the Maximum Plasma Concentration (Tmax) of MAE344[7]

End point description:

Tmax is the time to reach maximum (peak) MAE344 concentration after single-dose administration (time). MAE344 is a metabolite of LRX712 and plasma concentrations were determined using the actual recorded sampling times and non-compartmental method with Phoenix WinNonlin (Version 8.3). MAE344 was determined by a validated LC-MS/MS method. Concentrations below the lower limit of quantification (LLOQ) were treated as "zero" . LLOQ was 100 pg/mL. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Pre-dose, 0.5, 12, 24 and 168 hours after dose on Day 1; Pre-dose, 24 and 168 hours after dose on Day 29; Pre-dose, 24, 168, 1344 and 3360 hours after dose on Day 57

Notes:

[7] - 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 is specific for the arms presented. Placebo is not applicable.

End point values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	12	14	3	
Units: hours				
median (full range (min-max))				
Day 1 (n=12,14,3)	23.5 (12.0 to 24.1)	24.0 (12.0 to 169)	24.1 (24.0 to 24.1)	
Day 29 (n=10,13,2)	23.8 (22.6 to 24.0)	24.0 (22.2 to 193)	23.9 (23.8 to 24.0)	
Day 57 (n=11,13,3)	24.0 (21.9 to 169)	24.0 (22.0 to 24.1)	24.0 (23.5 to 24.0)	

Statistical analyses

No statistical analyses for this end point

Secondary: Maximum Observed Plasma Concentration (Cmax) of MAE344

End point title	Maximum Observed Plasma Concentration (Cmax) of MAE344[8]

End point description:

Cmax is defined as the maximum (peak) observed concentration following a dose. MAE344 is a metabolite of LRX712 and plasma concentrations were determined using the actual recorded sampling times and non-compartmental method with Phoenix WinNonlin (Version 8.3). MAE344 was determined by a validated LC-MS/MS method. Concentrations below the lower limit of quantification (LLOQ) were treated as "zero" . LLOQ was 100 pg/mL. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Pre-dose, 0.5, 12, 24 and 168 hours after dose on Day 1; Pre-dose, 24 and 168 hours after dose on Day 29; Pre-dose, 24, 168, 1344 and 3360 hours after dose on Day 57

Notes:

[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 is specific for the arms presented. Placebo is not applicable.

End point values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	12	14	3	
Units: ng/mL				
arithmetic mean (standard deviation)				
Day 1 (n=12,14,3)	38.3 (± 23.0)	52.1 (± 47.3)	75.2 (± 63.1)	
Day 29 (n=10,13,2)	42.6 (± 37.4)	40.5 (± 24.6)	281 (± 329)	
Day 57 (n=11,13,3)	26.0 (± 11.8)	45.1 (± 33.7)	321 (± 170)	

Statistical analyses

No statistical analyses for this end point

Secondary: Minimum Observed Plasma Concentration (Cmin) of MAE344

End point title	Minimum Observed Plasma Concentration (Cmin) of MAE344[9]

End point description:

Cmin is defined as the minimum (peak) observed concentration following a dose. MAE344 is a metabolite of LRX712 and plasma concentrations were determined using the actual recorded sampling times and non-compartmental method with Phoenix WinNonlin (Version 8.3). MAE344 was determined by a validated LC-MS/MS method. Concentrations below the lower limit of quantification (LLOQ) were treated as "zero" . LLOQ was 100 pg/mL. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Pre-dose on Day 29; Pre-dose, 1344 hours after dose on Day 57 (LRX712 15 mg arm) and 3360 hours after dose on Day 57 (LRX712 25 mg and 75 mg arms)

Notes:

[9] - 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 is specific for the arms presented. Placebo is not applicable.

End point values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	14	3	
Units: ng/mL				
arithmetic mean (standard deviation)				
Dose 1 (pre-dose Day 29) (n=10,14,3)	1.34 (± 1.76)	1.49 (± 1.82)	4.11 (± 7.01)	
Dose 2 (pre-dose Day 57) (n=11,13,3)	2.12 (± 2.15)	3.04 (± 3.06)	5.70 (± 9.10)	
Dose 3 (post-dose Day 57) (n=10,12,3)	0.916 (± 1.22)	0.0557 (± 0.140)	0.257 (± 0.445)	

Statistical analyses

No statistical analyses for this end point

Secondary: Synovial fluid concentrations of MAE344

End point title	Synovial fluid concentrations of MAE344[10]

End point description:

The observed synovial concentration following a dose. MAE344 is a metabolite of LRX712 and concentrations were determined using the actual recorded sampling times and non-compartmental method with Phoenix WinNonlin (Version 8.3). MAE344 was determined by a validated LC-MS/MS method. Concentrations below the lower limit of quantification (LLOQ) were treated as "zero" . LLOQ was 80 ng/mL. Samples were collected from a limited number of participants. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Pre-dose on Day 1, 29 and 57

Notes:

[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 is specific for the arms presented. Placebo is not applicable.

End point values	LRX712 15 mg	LRX712 25 mg	LRX712 75 mg	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	2	3	0[11]	
Units: ng/mL				
arithmetic mean (standard deviation)				
Day 1 (n=1,2,0)	0 (± 0)	0 (± 0)	()	
Day 29 (n=1,1,0)	0 (± 0)	0 (± 0)	()	
Day 57 (n=0,2,0)	0 (± 0)	0 (± 0)	()	

Notes:

[11] - The samples collected were outside the stability window.

Statistical analyses

No statistical analyses for this end point

Secondary: Change from baseline in articular cartilage [23Na] content measured by 7 Tesla MRI

End point title	Change from baseline in articular cartilage [23Na] content

	measured by 7 Tesla MRI[12]

End point description:

Magnetic resonance images (MRI) were obtained from the target knee to visualize and quantify changes in articular cartilage quality (assessed by changes in glycosaminoglycans content measured by sodium content) in the index region. The index region was defined as the combination of the femoral medial anterior (FMA), central (FMC) and posterior (FMP) cartilage subregions in the knee quality. Change from baseline in articular cartilage content was analyzed using a mixed effects model for repeated measures (MMRM). The model included baseline, treatment, timepoint and treatment-timepoints as fixed effects, and participant as random effect. Missing data was assumed to be Missing at Random (MAR). The data from the three participants who completed dosing with 75 mg LRX712 were considered exploratory. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Baseline, Week 16, 28 and 52

Notes:

[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 is specific for the arms presented.

End point values	LRX712 15 mg	LRX712 25 mg	Placebo	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	9	11	16	
Units: mmol/L				
least squares mean (standard error)				
Week 16 (n=8,8,14)	-7.4 (± 12.00)	12.7 (± 11.99)	8.5 (± 9.20)	
Week 28 (n=9,9,13)	-15.5 (± 11.21)	8.9 (± 11.13)	4.0 (± 9.24)	
Week 52 (n=9,11,16)	3.1 (± 12.12)	26.6 (± 11.19)	5.5 (± 9.20)	

Statistical analyses

No statistical analyses for this end point

Secondary: Change from baseline in cartilage volume in the index region measured by 7 Tesla MRI

End point title	Change from baseline in cartilage volume in the index region measured by 7 Tesla MRI[13]

End point description:

Magnetic resonance images (MRI) were obtained from the target knee to visualize and quantify changes in volume of cartilage in the index region. The index region was defined as the combination of the femoral medial anterior (FMA), central (FMC) and posterior (FMP) cartilage subregions in the knee quality. Change from baseline in cartilage volume was analyzed using a mixed effects model for repeated measures (MMRM). The model included baseline, treatment, timepoint and treatment-timepoints as fixed effects, and participant as random effect. Missing data was assumed to be Missing at Random (MAR). The data from the three participants who completed dosing with 75 mg LRX712 were considered exploratory. The Number of Subjects Analyzed differs as stated on the category column, in case of difference from Number of subjects that started the Arm.

End point type	Secondary

End point timeframe:

Baseline, Week 16 and 52

Notes:

[13] - 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 is specific for the arms presented.

End point values	LRX712 15 mg	LRX712 25 mg	Placebo	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	13	16	
Units: µL				
least squares mean (standard error)				
Week 16 (n=10,11,15)	-48.0 (± 52.64)	-17.4 (± 50.09)	24.4 (± 43.05)	
Week 52 (n=11,13,16)	19.5 (± 73.11)	49.3 (± 67.29)	123.1 (± 60.62)	

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information	
Timeframe for reporting adverse events: Adverse events were reported from first dose until last dose of study treatment plus 30 days.	
Assessment type	Systematic

Dictionary used	
Dictionary name	MedDRA
Dictionary version	27.1

Reporting groups	
Reporting group title	Placebo
Reporting group description: Placebo	
Reporting group title	Total
Reporting group description: Total	
Reporting group title	LRX712 15mg and 25mg
Reporting group description: LRX712 15mg and 25mg	
Reporting group title	LRX712 25 mg
Reporting group description: LRX712 25 mg	
Reporting group title	LRX712 75 mg
Reporting group description: LRX712 75 mg	
Reporting group title	LRX712 15 mg
Reporting group description: LRX712 15 mg	

Serious adverse events	Placebo	Total	LRX712 15mg and 25mg
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 16 (0.00%)	0 / 45 (0.00%)	0 / 26 (0.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0

Serious adverse events	LRX712 25 mg	LRX712 75 mg	LRX712 15 mg
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0

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

Non-serious adverse events	Placebo	Total	LRX712 15mg and 25mg
Total subjects affected by non-serious adverse events			
subjects affected / exposed	16 / 16 (100.00%)	44 / 45 (97.78%)	25 / 26 (96.15%)
Investigations			
Electrocardiogram ST segment elevation			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Injury, poisoning and procedural complications			
Contusion			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Bone contusion			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Immunisation reaction			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Skin abrasion			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Cardiac disorders			
Arrhythmia supraventricular			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Nervous system disorders			
Headache			
subjects affected / exposed	12 / 16 (75.00%)	26 / 45 (57.78%)	13 / 26 (50.00%)
occurrences (all)	21	40	18
Dizziness			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Somnolence			

subjects affected / exposed	1 / 16 (6.25%)	2 / 45 (4.44%)	0 / 26 (0.00%)
occurrences (all)	1	3	0
General disorders and administration site conditions			
Fatigue			
subjects affected / exposed	1 / 16 (6.25%)	3 / 45 (6.67%)	2 / 26 (7.69%)
occurrences (all)	1	3	2
Asthenia			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Injection site haematoma			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Influenza like illness			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	0	1	0
Feeling cold			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Pyrexia			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Malaise			
subjects affected / exposed	1 / 16 (6.25%)	2 / 45 (4.44%)	1 / 26 (3.85%)
occurrences (all)	1	2	1
Injection site reaction			
subjects affected / exposed	4 / 16 (25.00%)	10 / 45 (22.22%)	3 / 26 (11.54%)
occurrences (all)	6	18	4
Ear and labyrinth disorders			
Ear discomfort			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Gastrointestinal disorders			
Vomiting			
subjects affected / exposed	1 / 16 (6.25%)	2 / 45 (4.44%)	1 / 26 (3.85%)
occurrences (all)	1	2	1
Toothache			

subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Tooth disorder			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Diarrhoea			
subjects affected / exposed	1 / 16 (6.25%)	3 / 45 (6.67%)	2 / 26 (7.69%)
occurrences (all)	1	3	2
Abdominal pain upper			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Nausea			
subjects affected / exposed	3 / 16 (18.75%)	4 / 45 (8.89%)	1 / 26 (3.85%)
occurrences (all)	4	5	1
Respiratory, thoracic and mediastinal disorders			
Sinonasal obstruction			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Rhinorrhoea			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Oropharyngeal pain			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Cough			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Sneezing			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Skin and subcutaneous tissue disorders			
Dry skin			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Psychiatric disorders			

Irritability			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	2	2	0
Musculoskeletal and connective tissue disorders			
Osteoarthritis			
subjects affected / exposed	3 / 16 (18.75%)	3 / 45 (6.67%)	0 / 26 (0.00%)
occurrences (all)	4	4	0
Neck pain			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Myalgia			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Muscular weakness			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Limb discomfort			
subjects affected / exposed	3 / 16 (18.75%)	6 / 45 (13.33%)	3 / 26 (11.54%)
occurrences (all)	3	6	3
Joint warmth			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Joint swelling			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Joint stiffness			
subjects affected / exposed	0 / 16 (0.00%)	10 / 45 (22.22%)	10 / 26 (38.46%)
occurrences (all)	0	15	15
Back pain			
subjects affected / exposed	1 / 16 (6.25%)	2 / 45 (4.44%)	1 / 26 (3.85%)
occurrences (all)	1	2	1
Arthritis			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Arthralgia			

subjects affected / exposed	4 / 16 (25.00%)	11 / 45 (24.44%)	7 / 26 (26.92%)
occurrences (all)	7	16	9
Pain in extremity			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Infections and infestations			
Rhinitis			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Oral herpes			
subjects affected / exposed	1 / 16 (6.25%)	1 / 45 (2.22%)	0 / 26 (0.00%)
occurrences (all)	1	1	0
Nasopharyngitis			
subjects affected / exposed	3 / 16 (18.75%)	5 / 45 (11.11%)	2 / 26 (7.69%)
occurrences (all)	3	6	3
Gastrointestinal infection			
subjects affected / exposed	0 / 16 (0.00%)	1 / 45 (2.22%)	1 / 26 (3.85%)
occurrences (all)	0	1	1
Gastroenteritis viral			
subjects affected / exposed	1 / 16 (6.25%)	2 / 45 (4.44%)	1 / 26 (3.85%)
occurrences (all)	1	2	1
COVID-19			
subjects affected / exposed	1 / 16 (6.25%)	2 / 45 (4.44%)	1 / 26 (3.85%)
occurrences (all)	1	2	1

Non-serious adverse events	LRX712 25 mg	LRX712 75 mg	LRX712 15 mg
Total subjects affected by non-serious adverse events			
subjects affected / exposed	14 / 14 (100.00%)	3 / 3 (100.00%)	11 / 12 (91.67%)
Investigations			
Electrocardiogram ST segment elevation			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Injury, poisoning and procedural complications			
Contusion			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0

Bone contusion			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Immunisation reaction			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Skin abrasion			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Cardiac disorders			
Arrhythmia supraventricular			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Nervous system disorders			
Headache			
subjects affected / exposed	8 / 14 (57.14%)	1 / 3 (33.33%)	5 / 12 (41.67%)
occurrences (all)	10	1	8
Dizziness			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Somnolence			
subjects affected / exposed	0 / 14 (0.00%)	1 / 3 (33.33%)	0 / 12 (0.00%)
occurrences (all)	0	2	0
General disorders and administration site conditions			
Fatigue			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	1	0	1
Asthenia			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Injection site haematoma			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Influenza like illness			
subjects affected / exposed	0 / 14 (0.00%)	1 / 3 (33.33%)	0 / 12 (0.00%)
occurrences (all)	0	1	0

Feeling cold			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Pyrexia			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Malaise			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Injection site reaction			
subjects affected / exposed	1 / 14 (7.14%)	3 / 3 (100.00%)	2 / 12 (16.67%)
occurrences (all)	2	8	2
Ear and labyrinth disorders			
Ear discomfort			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Gastrointestinal disorders			
Vomiting			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Toothache			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Tooth disorder			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Diarrhoea			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	1	0	1
Abdominal pain upper			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Nausea			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Respiratory, thoracic and mediastinal disorders			

Sinonasal obstruction			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Rhinorrhoea			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Oropharyngeal pain			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Cough			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Sneezing			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Skin and subcutaneous tissue disorders			
Dry skin			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Psychiatric disorders			
Irritability			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Musculoskeletal and connective tissue disorders			
Osteoarthritis			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Neck pain			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Myalgia			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Muscular weakness			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0

Limb discomfort			
subjects affected / exposed	2 / 14 (14.29%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	2	0	1
Joint warmth			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Joint swelling			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Joint stiffness			
subjects affected / exposed	7 / 14 (50.00%)	0 / 3 (0.00%)	3 / 12 (25.00%)
occurrences (all)	11	0	4
Back pain			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Arthritis			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Arthralgia			
subjects affected / exposed	2 / 14 (14.29%)	0 / 3 (0.00%)	5 / 12 (41.67%)
occurrences (all)	4	0	5
Pain in extremity			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Infections and infestations			
Rhinitis			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
Oral herpes			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	0	0	0
Nasopharyngitis			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	2	0	1
Gastrointestinal infection			

subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1
Gastroenteritis viral			
subjects affected / exposed	1 / 14 (7.14%)	0 / 3 (0.00%)	0 / 12 (0.00%)
occurrences (all)	1	0	0
COVID-19			
subjects affected / exposed	0 / 14 (0.00%)	0 / 3 (0.00%)	1 / 12 (8.33%)
occurrences (all)	0	0	1

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
08 January 2020	The main purpose of this amendment was to update the study duration and the sample size calculation.
29 June 2020	The main purpose of this amendment was to update the language of essential protocol sections, such as Eligibility criteria and Prohibited medication among others, in order to better align them, correct inconsistencies that may have contributed to errors, and improve overall clarity.
26 November 2020	The main purpose of this amendment was to include flexible language for participating countries to follow their national regulatory requirements or guidelines related to the COVID-19 pandemic and SARS-CoV-2 testing.
16 July 2021	The main purpose of this amendment was to restart the study following an investigation to ensure subject safety, after a temporary hold had been placed on the study by Novartis in February 2021 due to tolerability concerns.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? Yes

Date	Interruption	Restart date
24 February 2021	Preliminary data from the first six subjects enrolled in LRX712A12201 identified injection site adverse events, including but not limited to joint warmth and/or swelling, along with transient elevations in inflammatory biomarkers, following dose administration in subjects (n=3) receiving active drug. As a result, Novartis put the study on temporary hold in February 2021 while further investigations were initiated. Analysis of stored biomarker samples from the FIH study also identified a pattern of transient elevations in high sensitivity C-Reactive Protein (hsCRP) post-administration, primarily at LRX712 dose levels > 15 mg. In addition, the estimated probability of local tolerability AEs rose with LRX712 dose from 15 mg (5% higher than placebo) to 25 mg (10% higher than placebo) to 75 mg (45% higher than placebo). Therefore, based on available preclinical efficacy data, and on the available safety and tolerability data from human studies, two dose levels of LRX712 were implemented in the revised study design. The original two-arm study design (75 mg LRX712 vs. placebo) was modified to a three-arm design, with two lower doses of LRX712 (15 mg and 25 mg) vs. placebo.	05 November 2021

Notes:

Limitations and caveats

None reported