Clinical trial results:
COVID-19: A Phase 3 Multicenter Clinical Trial to Evaluate the Safety, Reactogenicity and Immunogenicity of the Investigational SARS-CoV-2 mRNA Vaccine CVnCoV in Adults 18 Years of Age and Above With Co-morbidities

Summary

EudraCT number	2020-004070-22
Trial protocol	BE
Global end of trial date	21 September 2021

Results information

Result version number	v1 (current)
This version publication date	30 April 2022
First version publication date	30 April 2022

Trial information

Trial identification

Sponsor protocol code	CV-NCOV-003

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT04860258
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	CureVac AG
Sponsor organisation address	Schumannstrasse 27, Frankfurt, Germany, 60325
Public contact	Clinical Trial Information, CureVac AG, 0049 6976805870, clinicaltrials@curevac.com
Scientific contact	Clinical Trial Information, CureVac AG, 0049 6976805870, clinicaltrials@curevac.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	21 September 2021
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	21 September 2021
Was the trial ended prematurely?	Yes

Notes:

General information about the trial

Main objective of the trial:

• To evaluate the safety and reactogenicity profile after 1 and 2 dose administrations of investigational severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) messenger ribonucleic acid (mRNA) vaccine (CVnCoV).
• To evaluate the humoral immune responses 14 days after 2 dose administrations of CVnCoV.

Protection of trial subjects:

This trial was conducted with the highest respect for the individual participants in compliance with the requirements of this clinical trial protocol (and amendments), and also in compliance with the following:
• The ethical principles that have their origin in the Declaration of Helsinki.
• International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use E6 (R2) Good Clinical Practice: Revised and consolidated guidelines.
• All applicable laws and regulations, including, without limitation, data privacy laws, clinical trial disclosure laws, and regulations.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	22 April 2021
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	Belgium: 129
Worldwide total number of subjects	129
EEA total number of subjects	129

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)	114
From 65 to 84 years	15
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

This trial was performed in Belgium between 22 April 2021 and 21 September 2021.

Pre-assignment

Screening details:

Of the 172 participants who were screened, 129 participants with co-morbidities known to increase the risk for (severe) COVID-19 were enrolled. Participants received investigational SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29.

Period 1

Period 1 title	Overall Trial (overall period)
Is this the baseline period?	Yes
Allocation method	Not applicable
Blinding used	Not blinded

Arms

Are arms mutually exclusive?	Yes
Arm title	Chronic Kidney Disease

Arm description:

Participants with chronic kidney disease received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Kidney function was ascertained from the serum creatinine measurement within the last 6 months, converted into estimated glomerular filtration rate (eGFR) using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation, with impaired kidney function defined as eGFR <60 mL/min/1.73m².

Arm type	Experimental
Investigational medicinal product name	CVnCoV Vaccine
Investigational medicinal product code	CV07050101
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intramuscular use

Dosage and administration details:

Intramuscular (IM) injection in the deltoid area, preferably in the nondominant arm.

Arm title	Chronic Obstructive Pulmonary Disease (COPD)

Arm description:

Participants with COPD received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. COPD included emphysema and chronic bronchitis.

Arm type	Experimental
Investigational medicinal product name	CVnCoV Vaccine
Investigational medicinal product code	CV07050101
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intramuscular use

Dosage and administration details:

IM injection in the deltoid area, preferably in the nondominant arm.

Arm title	Obesity

Arm description:

Participants with obesity received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Obesity was defined as a body mass index (BMI) >32 kg/m².

Arm type	Experimental

Investigational medicinal product name	CVnCoV Vaccine
Investigational medicinal product code	CV07050101
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intramuscular use

Dosage and administration details:

IM injection in the deltoid area, preferably in the nondominant arm.

Arm title	Chronic Cardiovascular Disease

Arm description:

Participants with chronic cardiovascular disease received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Chronic cardiovascular disease included heart failure, structural heart disorder, coronary artery disease, cardiomyopathies and arterial hypertension.

Arm type	Experimental
Investigational medicinal product name	CVnCoV Vaccine
Investigational medicinal product code	CV07050101
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intramuscular use

Dosage and administration details:

IM injection in the deltoid area, preferably in the nondominant arm.

Arm title	Chronic Human Immunodeficiency Virus (HIV) Infection

Arm description:

Participants with chronic HIV infection received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants with chronic HIV infection required stable aviremia (<50 copies/mL) and CD4 count >350/mL as documented by blood samples taken within 12 months before enrollment. Viral load <50 copies/mL over 12 months with transient changes of 50-350 copies/mL was allowed.

Arm type	Experimental
Investigational medicinal product name	CVnCoV Vaccine
Investigational medicinal product code	CV07050101
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intramuscular use

Dosage and administration details:

IM injection in the deltoid area, preferably in the nondominant arm.

Arm title	Type 2 Diabetes Mellitus

Arm description:

Participants with type 2 diabetes mellitus received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants with type 2 diabetes mellitus required diabetes mellitus to be controlled with medication [HbA1c <58 mmol/mol (7.45%)].

Arm type	Experimental
Investigational medicinal product name	CVnCoV Vaccine
Investigational medicinal product code	CV07050101
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intramuscular use

Dosage and administration details:

IM injection in the deltoid area, preferably in the nondominant arm.

Arm title	Renal Transplant

Arm description:

Participants with renal transplant received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants had a renal transplant at least a year ago under stable conditions for at least 6 months with medications, categorized as low risk of rejection.

Arm type	Experimental

Investigational medicinal product name	CVnCoV Vaccine
Investigational medicinal product code	CV07050101
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intramuscular use

Dosage and administration details:

IM injection in the deltoid area, preferably in the nondominant arm.

Number of subjects in period 1	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity
Started	1	1	52
Completed	1	1	48
Not completed	0	0	4
Consent withdrawn by subject	-	-	4

Number of subjects in period 1	Chronic Cardiovascular Disease	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus
Started	33	33	7
Completed	32	29	6
Not completed	1	4	1
Consent withdrawn by subject	1	4	1

Number of subjects in period 1	Renal Transplant
Started	2
Completed	2
Not completed	0
Consent withdrawn by subject	-

Baseline characteristics

Reporting groups	
Reporting group title	Chronic Kidney Disease
Reporting group description:	
Participants with chronic kidney disease received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Kidney function was ascertained from the serum creatinine measurement within the last 6 months, converted into estimated glomerular filtration rate (eGFR) using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation, with impaired kidney function defined as eGFR <60 mL/min/1.73m².	
Reporting group title	Chronic Obstructive Pulmonary Disease (COPD)
Reporting group description:	
Participants with COPD received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. COPD included emphysema and chronic bronchitis.	
Reporting group title	Obesity
Reporting group description:	
Participants with obesity received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Obesity was defined as a body mass index (BMI) >32 kg/m².	
Reporting group title	Chronic Cardiovascular Disease
Reporting group description:	
Participants with chronic cardiovascular disease received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Chronic cardiovascular disease included heart failure, structural heart disorder, coronary artery disease, cardiomyopathies and arterial hypertension.	
Reporting group title	Chronic Human Immunodeficiency Virus (HIV) Infection
Reporting group description:	
Participants with chronic HIV infection received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants with chronic HIV infection required stable aviremia (<50 copies/mL) and CD4 count >350/mL as documented by blood samples taken within 12 months before enrollment. Viral load <50 copies/mL over 12 months with transient changes of 50-350 copies/mL was allowed.	
Reporting group title	Type 2 Diabetes Mellitus
Reporting group description:	
Participants with type 2 diabetes mellitus received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants with type 2 diabetes mellitus required diabetes mellitus to be controlled with medication [HbA1c <58 mmol/mol (7.45%)].	
Reporting group title	Renal Transplant
Reporting group description:	
Participants with renal transplant received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants had a renal transplant at least a year ago under stable conditions for at least 6 months with medications, categorized as low risk of rejection.	

Reporting group values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity
Number of subjects	1	1	52
Age categorical Units: Subjects			

Age continuous			
Values of '99999' indicate standard deviation could not be calculated as a single participant was analyzed.			
Units: years			
arithmetic mean	54.0	73.0	42.7
standard deviation	± 99999	± 99999	± 10.77

Gender categorical Units: Subjects			
Female	0	0	23
Male	1	1	29
Ethnicity Units: Subjects			
Hispanic or Latino	0	0	0
Not Hispanic or Latino	1	1	49
Unknown or Not Reported	0	0	3
Race Units: Subjects			
White	1	1	48
Black or African American	0	0	2
Asian	0	0	0
American Indian or Alaska Native	0	0	0
Native Hawaiian or Other Pacific Islander	0	0	0
Other	0	0	1
Not Reported	0	0	0
Unknown	0	0	1

Reporting group values	Chronic Cardiovascular Disease	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus
Number of subjects	33	33	7
Age categorical Units: Subjects			
Age continuous			
Values of '99999' indicate standard deviation could not be calculated as a single participant was analyzed.			
Units: years			
arithmetic mean	52.3	43.7	58.3
standard deviation	± 12.36	± 11.69	± 9.21
Gender categorical Units: Subjects			
Female	7	4	3
Male	26	29	4
Ethnicity Units: Subjects			
Hispanic or Latino	0	1	0
Not Hispanic or Latino	33	32	7
Unknown or Not Reported	0	0	0
Race Units: Subjects			
White	30	25	7
Black or African American	3	3	0
Asian	0	0	0
American Indian or Alaska Native	0	0	0
Native Hawaiian or Other Pacific Islander	0	0	0
Other	0	5	0

Not Reported	0	0	0
Unknown	0	0	0

Reporting group values	Renal Transplant	Total	
Number of subjects	2	129	
Age categorical Units: Subjects			

Age continuous			
Values of '99999' indicate standard deviation could not be calculated as a single participant was analyzed.			
Units: years			
arithmetic mean	39.0		
standard deviation	± 2.83	-	
Gender categorical Units: Subjects			
Female	0	37	
Male	2	92	
Ethnicity Units: Subjects			
Hispanic or Latino	0	1	
Not Hispanic or Latino	2	125	
Unknown or Not Reported	0	3	
Race Units: Subjects			
White	2	114	
Black or African American	0	8	
Asian	0	0	
American Indian or Alaska Native	0	0	
Native Hawaiian or Other Pacific Islander	0	0	
Other	0	6	
Not Reported	0	0	
Unknown	0	1	

End points

End points reporting groups

Reporting group title	Chronic Kidney Disease
Reporting group description:	
Participants with chronic kidney disease received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Kidney function was ascertained from the serum creatinine measurement within the last 6 months, converted into estimated glomerular filtration rate (eGFR) using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation, with impaired kidney function defined as eGFR <60 mL/min/1.73m².	
Reporting group title	Chronic Obstructive Pulmonary Disease (COPD)
Reporting group description:	
Participants with COPD received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. COPD included emphysema and chronic bronchitis.	
Reporting group title	Obesity
Reporting group description:	
Participants with obesity received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Obesity was defined as a body mass index (BMI) >32 kg/m².	
Reporting group title	Chronic Cardiovascular Disease
Reporting group description:	
Participants with chronic cardiovascular disease received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Chronic cardiovascular disease included heart failure, structural heart disorder, coronary artery disease, cardiomyopathies and arterial hypertension.	
Reporting group title	Chronic Human Immunodeficiency Virus (HIV) Infection
Reporting group description:	
Participants with chronic HIV infection received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants with chronic HIV infection required stable aviremia (<50 copies/mL) and CD4 count >350/mL as documented by blood samples taken within 12 months before enrollment. Viral load <50 copies/mL over 12 months with transient changes of 50-350 copies/mL was allowed.	
Reporting group title	Type 2 Diabetes Mellitus
Reporting group description:	
Participants with type 2 diabetes mellitus received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants with type 2 diabetes mellitus required diabetes mellitus to be controlled with medication [HbA1c <58 mmol/mol (7.45%)].	
Reporting group title	Renal Transplant
Reporting group description:	
Participants with renal transplant received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants had a renal transplant at least a year ago under stable conditions for at least 6 months with medications, categorized as low risk of rejection.	

Primary: Number of Participants Who Experienced a Solicited Adverse Event (AE) Occurring on the Day of Vaccination and the Following 7 Days After Any Dose

End point title	Number of Participants Who Experienced a Solicited Adverse Event (AE) Occurring on the Day of Vaccination and the Following 7 Days After Any Dose[1]
End point description:	
Reactogenicity was assessed daily via collection of solicited local AEs (injection site pain, redness, swelling, and itching) and solicited systemic AEs (fever, headache, fatigue, chills, myalgia, arthralgia, nausea/vomiting, and diarrhea) using paper diary cards. By definition, all solicited local AEs occurring from the time of first vaccination were considered related to trial vaccination. For solicited systemic AEs, the Investigator assessed the relationship between trial vaccine and each occurrence of each AE. The Safety Analysis Set (SAS) consisted of all participants who received at least 1 dose of CVnCoV and for whom any post-vaccination safety data were available. Values of "99999" indicate standard deviation could not be calculated as a single participant was analyzed.	
End point type	Primary

End point timeframe:

Up to 7 days after vaccination (Days 1 to 8 and Days 29 to 36)

Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	52	33
Units: participants				
Any solicited local AEs	1	1	40	28
Any solicited systemic AEs	1	1	46	29
Any related solicited systemic AEs	0	0	44	26

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	33	7	2	
Units: participants				
Any solicited local AEs	26	6	2	
Any solicited systemic AEs	31	7	2	
Any related solicited systemic AEs	28	6	2	

Statistical analyses

No statistical analyses for this end point

Primary: Intensity of Solicited AEs Per US Food and Drug Administration (FDA) Toxicity Grading Scale Occurring on the Day of Vaccination and the Following 7 Days After Any Dose

End point title	Intensity of Solicited AEs Per US Food and Drug Administration (FDA) Toxicity Grading Scale Occurring on the Day of Vaccination and the Following 7 Days After Any Dose[2]

End point description:

Reactogenicity was assessed daily via collection of solicited local AEs (injection site pain, redness, swelling, and itching) and solicited systemic AEs (fever, headache, fatigue, chills, myalgia, arthralgia, nausea/vomiting, and diarrhea) using paper diary cards. Intensity of solicited local AEs and solicited systemic AEs were graded per the FDA Toxicity Grading Scale at Grades 1-3, where higher grades indicate a worse outcome. The SAS including only participants who experienced solicited local and systemic AEs.

End point type	Primary

End point timeframe:

Up to 7 days after vaccination (Days 1 to 8 and Days 29 to 36)

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: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	0[3]	46[4]	29[5]
Units: participants				
Any solicited local AEs: Grade 1	1		30	23
Any solicited local AEs: Grade 2	0		9	4
Any solicited local AEs: Grade 3	0		1	1
Any solicited systemic AEs: Grade 1	1		8	8
Any solicited systemic AEs: Grade 2	0		19	12
Any solicited systemic AEs: Grade 3	0		19	9

Notes:

[3] - No participants in the SAS experienced a solicited local or systemic AE.

[4] - Solicited local AE n = 40.

[5] - Solicited local AE n = 28.

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	31[6]	7[7]	2	
Units: participants				
Any solicited local AEs: Grade 1	20	6	2	
Any solicited local AEs: Grade 2	6	0	0	
Any solicited local AEs: Grade 3	0	0	0	
Any solicited systemic AEs: Grade 1	8	2	0	
Any solicited systemic AEs: Grade 2	14	3	2	
Any solicited systemic AEs: Grade 3	9	2	0	

Notes:

[6] - Solicited local AE n = 26.

[7] - Solicited local AE n = 6.
Solicited systemic AE n = 7.

Statistical analyses

No statistical analyses for this end point

Primary: Duration of Solicited AEs Occurring on the Day of Vaccination and the Following 7 Days After Any Dose

End point title	Duration of Solicited AEs Occurring on the Day of Vaccination and the Following 7 Days After Any Dose[8]

End point description:

Reactogenicity was assessed daily via collection of solicited local AEs (injection site pain, redness, swelling, and itching) and solicited systemic AEs (fever, headache, fatigue, chills, myalgia, arthralgia, nausea/vomiting, and diarrhea) using paper diary cards. Duration was calculated as consecutive days with a respective solicited AE regardless of the grade of the AE. AEs ongoing after Day 8 were included. The SAS including only participants who experienced solicited local and systemic AEs. Values of "99999" indicate standard deviation could not be calculated as a single participant was analyzed.

End point type	Primary

End point timeframe:

Up to 7 days after vaccination (Days 1 to 8 and Days 29 to 36)

Notes:

[8] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	0[9]	46[10]	29[11]
Units: days				
arithmetic mean (standard deviation)				
Any solicited local AEs	1.0 (± 99999)	()	2.2 (± 1.11)	2.1 (± 1.21)
Any solicited systemic AEs	1.0 (± 99999)	()	4.4 (± 5.06)	4.1 (± 2.58)

Notes:

[9] - No solicited AEs were reported.

[10] - Any solicited local AEs n = 40.

[11] - Any solicited local AEs n = 28.

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	31[12]	7[13]	2	
Units: days				
arithmetic mean (standard deviation)				
Any solicited local AEs	2.4 (± 0.70)	1.8 (± 0.75)	1.0 (± 0.00)	
Any solicited systemic AEs	4.3 (± 3.10)	5.4 (± 4.83)	3.0 (± 1.41)	

Notes:

[12] - Any solicited local AEs n = 26.

[13] - Any solicited local AEs n = 6.

Statistical analyses

No statistical analyses for this end point

Primary: Number of Participants Who Experienced an Unsolicited AE Occurring on the Day of Vaccination and the Following 28 Days After Any Dose

End point title	Number of Participants Who Experienced an Unsolicited AE Occurring on the Day of Vaccination and the Following 28 Days After Any Dose[14]

End point description:

Diaries were used for collection of unsolicited AEs on each vaccination day and the following 28 days. In addition, participants were contacted by phone to verify whether they had any health concerns since the last visit. The Investigator assessed the relationship between trial vaccine and each occurrence of each AE. The SAS consisted of all participants who received at least 1 dose of CVnCoV and for whom any post-vaccination safety data were available.

End point type	Primary

End point timeframe:

Up to 28 days after vaccination (Days 1 to 29 and Days 29 to 57)

Notes:

[14] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	52	33
Units: participants				
Any unsolicited AEs	1	1	27	14
Any related unsolicited AEs	1	1	12	5

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	33	7	2	
Units: participants				
Any unsolicited AEs	19	4	1	
Any related unsolicited AEs	7	1	1	

Statistical analyses

No statistical analyses for this end point

Primary: Intensity of Unsolicited AEs Per the Investigator's Assessment Occurring on the Day of Vaccination and the Following 28 Days After Any Dose

End point title	Intensity of Unsolicited AEs Per the Investigator's Assessment Occurring on the Day of Vaccination and the Following 28 Days After Any Dose[15]

End point description:

Diaries were used for collection of unsolicited AEs on each vaccination day and the following 28 days. In addition, participants were contacted by phone to verify whether they had any health concerns since the last visit. Participants were included only once, at the maximum severity. The Investigator made an assessment of intensity for each AE reported during the trial and assigned it to one of the following categories:
• Mild: an event that was easily tolerated by the participant, causing minimal discomfort and not interfering with everyday activities.
• Moderate: an event that caused sufficient discomfort to interfere with normal everyday activities.
• Severe: an event that prevented normal everyday activities.
The SAS including only participants who experienced unsolicited AEs.

End point type	Primary

End point timeframe:

Up to 28 days after vaccination (Days 1 to 29 and Days 29 to 57)

Notes:

[15] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	27	14
Units: participants				
Mild	1	0	6	4
Moderate	0	1	17	7
Severe	0	0	4	3

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	19	4	1	
Units: participants				
Mild	8	2	1	
Moderate	10	1	0	
Severe	1	1	0	

Statistical analyses

No statistical analyses for this end point

Primary: Number of Participants Who Experienced a Serious Adverse Event (SAE) During the Trial

End point title	Number of Participants Who Experienced a Serious Adverse Event (SAE) During the Trial[16]

End point description:

An SAE was defined as any untoward medical occurrence that, at any dose:
• Resulted in death.
• Was life-threatening.
• Required inpatient hospitalization or prolongation of existing hospitalization.
• Resulted in persistent disability/incapacity.
• Was a congenital anomaly/birth defect in the offspring of the participant.
• Was an important medical event.
The Investigator assessed the relationship between trial vaccine and each occurrence of each AE.
The SAS consisted of all participants who received at least 1 dose of CVnCoV and for whom any post-vaccination safety data were available.

End point type	Primary

End point timeframe:

Up to Day 57

Notes:

[16] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	52	33
Units: participants				
Any SAEs	0	0	0	0
Any related SAEs	0	0	0	0

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	33	7	2	
Units: participants				
Any SAEs	0	1	0	
Any related SAEs	0	0	0	

Statistical analyses

No statistical analyses for this end point

Primary: Number of Participants Who Experienced an Adverse Event of Special Interest (AESI) During the Trial

End point title	Number of Participants Who Experienced an Adverse Event of Special Interest (AESI) During the Trial[17]

End point description:

AESIs included:
- AEs with a suspected immune-mediated etiology including potential immune-mediated diseases.
- Other AEs relevant to SARS-CoV-2 vaccine development or the target disease.
- Non-serious intercurrent medical conditions that may affect the immune response to vaccination was also collected throughout the trial.

Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. The Investigator assessed the relationship between trial vaccine and each occurrence of each AE. The SAS consisted of all participants who received at least 1 dose of CVnCoV and for whom any post-vaccination safety data were available.

End point type	Primary

End point timeframe:

Up to Day 57

Notes:

[17] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	52	33
Units: participants				
Any AESIs	0	0	2	1
Any Related AESIs	0	0	0	0

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	33	7	2	
Units: participants				
Any AESIs	1	0	0	
Any Related AESIs	0	0	0	

Statistical analyses

No statistical analyses for this end point

Primary: Number of Participants Seroconverting for SARS-CoV-2 Spike Protein Receptor-Binding Domain (RBD) Antibodies on Day 43

End point title	Number of Participants Seroconverting for SARS-CoV-2 Spike Protein Receptor-Binding Domain (RBD) Antibodies on Day 43[18]

End point description:

Seroconversion was defined as any increase in titer in antibodies against SARS-CoV-2 RBD versus baseline. Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. The Per Protocol Immunogenicity subset (PPI) included all participants who received both doses within the windows defined in the protocol, had no major protocol deviations expected to impact the immunogenicity outcomes, had not received medical treatments (such as blood products, immunoglobulin therapy) that may interfere with any of the immunogenicity measurements and had at least 1 blood sample collected starting at 14 days (Day 43) post-second vaccination available for analysis.

End point type	Primary

End point timeframe:

Baseline and Day 43

Notes:

[18] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	38	21
Units: count of seroconverted participants	1	0	34	19

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	18	5	2	
Units: count of seroconverted participants	16	4	1	

Statistical analyses

No statistical analyses for this end point

Primary: Geometric Mean Titers (GMTs) of Serum SARS-CoV-2 Spike Protein RBD Antibodies on Day 43

End point title	Geometric Mean Titers (GMTs) of Serum SARS-CoV-2 Spike Protein RBD Antibodies on Day 43[19]

End point description:

The SARS-CoV-2 spike RBD protein-specific antibodies are expressed as GMT (geometric mean of reciprocal duplicate dilutions). Concentration/titers marked as below the lower limit of quantification (LLOQ) were arbitrary replaced by half of the LLOQ for GMT computations purpose. Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. The PPI included all participants who received both doses within the windows defined in the protocol, had no major protocol deviations expected to impact the immunogenicity outcomes, had not received medical treatments (such as blood products, immunoglobulin therapy) that may interfere with any of the immunogenicity measurements and had at least 1 blood sample collected starting at 14 days (Day 43) post-second vaccination available for analysis. Values of "99999" indicate standard deviation could not be calculated as a single participant was analyzed.

End point type	Primary

End point timeframe:

Day 43

Notes:

[19] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	38	21
Units: titers				

geometric mean (standard deviation)	518.410 (± 99999)	50.000 (± 99999)	1576.121 (± 7.5115)	1385.663 (± 5.8935)

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	18	5	2	
Units: titers				
geometric mean (standard deviation)	968.795 (± 4.7759)	183.523 (± 2.4423)	416.051 (± 20.0136)	

Statistical analyses

No statistical analyses for this end point

Primary: Subset Participants: Number of Participants Seroconverting for SARS-CoV-2 Neutralizing Antibodies on Day 43

End point title	Subset Participants: Number of Participants Seroconverting for SARS-CoV-2 Neutralizing Antibodies on Day 43[20]

End point description:

Seroconversion was defined as any increase in titer of SARS-CoV-2 neutralizing antibodies versus baseline. Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. A subset of the PPI population was included in the measurement of neutralizing activity.

End point type	Primary

End point timeframe:

Baseline and Day 43

Notes:

[20] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	23	11
Units: count of seroconverted participants	1	0	16	6

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	5	2	

Units: count of seroconverted participants	7	0	1	

Statistical analyses

No statistical analyses for this end point

Primary: Subset Participants: GMTs of Serum SARS-CoV-2 Neutralizing Antibodies on Day 43

End point title	Subset Participants: GMTs of Serum SARS-CoV-2 Neutralizing Antibodies on Day 43[21]

End point description:

The SARS-CoV-2 neutralizing antibodies are expressed as GMT (geometric mean of reciprocal duplicate dilutions). Concentrations/titers marked as below the LLOQ were arbitrary replaced by half of the LLOQ for GMT computations purpose. Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. A subset of the PPI population was included in the measurement of neutralizing activity. Values of "99999" indicate standard deviation could not be calculated as a single participant was analyzed.

End point type	Primary

End point timeframe:

Day 43

Notes:

[21] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: No additional statistical analysis was pre-specified for this endpoint.

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	23	11
Units: titers				
geometric mean (standard deviation)	14.140 (± 99999)	5.000 (± 99999)	57.426 (± 9.1427)	16.042 (± 4.0790)

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	5	2	
Units: titers				
geometric mean (standard deviation)	18.778 (± 3.9937)	5.000 (± 1.0000)	10.000 (± 2.6651)	

Statistical analyses

No statistical analyses for this end point

Secondary: Number of Participants Seroconverting for SARS-CoV-2 Spike Protein RBD Antibodies on Days 29, 120, 211 and 393

End point title	Number of Participants Seroconverting for SARS-CoV-2 Spike Protein RBD Antibodies on Days 29, 120, 211 and 393

End point description:

Seroconversion was defined as any increase in titer in antibodies against SARS-CoV-2 RBD versus baseline. Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. The analysis population was the PPI. No data was collected for Days 211 and 393 due to early study termination. Values of "9999" indicate no participants were analyzed at that timepoint.

End point type	Secondary

End point timeframe:

Baseline and Days 29, 120, 211 and 393

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	39	21
Units: count of seroconverted participants				
Day 29 (n = 1, 1, 39, 21, 18, 5, 2)	0	0	13	7
Day 120 (n = 0, 1, 7, 2, 2, 1, 0)	9999	0	6	1
Day 211 (n = 0, 0, 0, 0, 0, 0, 0)	9999	9999	9999	9999
Day 393 (n = 0, 0, 0, 0, 0, 0, 0)	9999	9999	9999	9999

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	18	5	2	
Units: count of seroconverted participants				
Day 29 (n = 1, 1, 39, 21, 18, 5, 2)	3	1	0	
Day 120 (n = 0, 1, 7, 2, 2, 1, 0)	2	1	9999	
Day 211 (n = 0, 0, 0, 0, 0, 0, 0)	9999	9999	9999	
Day 393 (n = 0, 0, 0, 0, 0, 0, 0)	9999	9999	9999	

Statistical analyses

No statistical analyses for this end point

Secondary: GMTs of Serum SARS-CoV-2 Spike Protein RBD Antibodies on Days 29, 120, 211 and 393

End point title	GMTs of Serum SARS-CoV-2 Spike Protein RBD Antibodies on Days 29, 120, 211 and 393

End point description:

The SARS-CoV-2 spike RBD protein-specific antibodies are expressed as GMT (geometric mean of reciprocal duplicate dilutions). Concentrations/titers marked as below the LLOQ were arbitrary replaced by half of the LLOQ for GMT computations purpose. Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. The analysis population was the PPI. No data was collected for Days 211 and 393 due to early study termination. Values of "9999" indicate no participants were analyzed at that timepoint and values of "99999" indicate standard deviation could not be calculated as a single participant was analyzed.

End point type	Secondary

End point timeframe:

Days 29, 120, 211 and 393

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	39	21
Units: titers				
geometric mean (standard deviation)				
Day 29 (n = 1, 1, 39, 21, 18, 5, 2)	50.000 (± 99999)	50.000 (± 99999)	234.464 (± 9.4598)	153.351 (± 5.6201)
Day 120 (n = 0, 1, 7, 2, 2, 1, 0)	9999 (± 9999)	50.000 (± 99999)	1861.522 (± 7.3966)	179.992 (± 6.1193)
Day 211 (n = 0, 0, 0, 0, 0, 0, 0)	9999 (± 9999)	9999 (± 9999)	9999 (± 9999)	9999 (± 9999)
Day 393 (n = 0, 0, 0, 0, 0, 0, 0)	9999 (± 9999)	9999 (± 9999)	9999 (± 9999)	9999 (± 9999)

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	18	5	2	
Units: titers				
geometric mean (standard deviation)				
Day 29 (n = 1, 1, 39, 21, 18, 5, 2)	104.230 (± 5.4583)	90.306 (± 3.7506)	50.000 (± 1.0000)	
Day 120 (n = 0, 1, 7, 2, 2, 1, 0)	174.749 (± 1.1589)	554.010 (± 99999)	9999 (± 9999)	
Day 211 (n = 0, 0, 0, 0, 0, 0, 0)	9999 (± 9999)	9999 (± 9999)	9999 (± 9999)	
Day 393 (n = 0, 0, 0, 0, 0, 0, 0)	9999 (± 9999)	9999 (± 9999)	9999 (± 9999)	

Statistical analyses

No statistical analyses for this end point

Secondary: Subset Participants: Number of Participants Seroconverting for SARS-CoV-2 Neutralizing Antibodies on Days 29 and 120

End point title	Subset Participants: Number of Participants Seroconverting for SARS-CoV-2 Neutralizing Antibodies on Days 29 and 120

End point description:

Seroconversion was defined as any increase in titer of SARS-CoV-2 neutralizing antibodies versus baseline. Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. A subset of the PPI population was included in the measurement of neutralizing activity. Values of "9999" indicate no participants were analyzed at that timepoint.

End point type	Secondary

End point timeframe:

Baseline and Days 29 and 120

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	24	11
Units: count of seroconverted participants				
Day 29 (n = 1, 1, 24, 11, 11, 5, 2)	0	0	7	2
Day 120 (n = 0, 1, 5, 1, 2, 1, 0)	9999	0	2	0

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	5	2	
Units: count of seroconverted participants				
Day 29 (n = 1, 1, 24, 11, 11, 5, 2)	1	0	0	
Day 120 (n = 0, 1, 5, 1, 2, 1, 0)	1	0	9999	

Statistical analyses

No statistical analyses for this end point

Secondary: Subset Participants: GMTs of Serum SARS-CoV-2 Neutralizing Antibodies on Days 29 and 120

End point title	Subset Participants: GMTs of Serum SARS-CoV-2 Neutralizing Antibodies on Days 29 and 120

End point description:

The SARS-CoV-2 neutralizing antibodies are expressed as GMT (geometric mean of reciprocal duplicate dilutions). Concentrations/titers marked as below the LLOQ were arbitrary replaced by half of the LLOQ for GMT computations purpose. Participants who received a licensed/authorized vaccine were censored at the day after receiving the licensed/authorized vaccine. A subset of the PPI population was included in the measurement of neutralizing activity. Values of "9999" indicate no participants were analyzed at that timepoint and values of "99999" indicate standard deviation could not be calculated as a single participant was analyzed.

End point type	Secondary

End point timeframe:

Days 29 and 120

End point values	Chronic Kidney Disease	Chronic Obstructive Pulmonary Disease (COPD)	Obesity	Chronic Cardiovascular Disease
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	1	1	24	11
Units: titers				
geometric mean (standard deviation)				
Day 29 (n = 1, 1, 24, 11, 11, 5, 2)	5.000 (± 99999)	5.000 (± 99999)	17.311 (± 7.4073)	7.297 (± 2.3521)
Day 120 (n = 0, 1, 5, 1, 2, 1, 0)	9999 (± 9999)	5.000 (± 99999)	26.389 (± 7.0380)	5.000 (± 99999)

End point values	Chronic Human Immunodeficiency Virus (HIV) Infection	Type 2 Diabetes Mellitus	Renal Transplant	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	11	5	2	
Units: titers				
geometric mean (standard deviation)				
Day 29 (n = 1, 1, 24, 11, 11, 5, 2)	6.234 (± 2.0782)	5.000 (± 1.0000)	5.000 (± 1.0000)	
Day 120 (n = 0, 1, 5, 1, 2, 1, 0)	7.071 (± 1.6325)	5.000 (± 99999)	9999 (± 9999)	

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

Up to Day 57

Adverse event reporting additional description:

The SAS consisted of all participants who received at least 1 dose of CVnCoV and for whom any post-vaccination safety data were available.

Assessment type	Systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	24.0

Reporting groups

Reporting group title	COPD

Reporting group description:

Participants with COPD received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. COPD included emphysema and chronic bronchitis.

Reporting group title	Chronic Kidney Disease

Reporting group description:

Participants with chronic kidney disease received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Kidney function was ascertained from the serum creatinine measurement within the last 6 months, converted into eGFR using the CKD-EPI equation, with impaired kidney function defined as eGFR <60 mL/min/1.73m².

Reporting group title	Chronic HIV Infection

Reporting group description:

Participants with chronic HIV infection received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants with chronic HIV infection required stable aviremia (<50 copies/mL) and CD4 count >350/mL as documented by blood samples taken within 12 months before enrollment. Viral load <50 copies/mL over 12 months with transient changes of 50-350 copies/mL was allowed.

Reporting group title	Type 2 Diabetes Mellitus

Reporting group description:

Participants with type 2 diabetes mellitus received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants with type 2 diabetes mellitus required diabetes mellitus to be controlled with medication [HbA1c <58 mmol/mol (7.45%)].

Reporting group title	Renal Transplant

Reporting group description:

Participants with renal transplant received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Participants had a renal transplant at least a year ago under stable conditions for at least 6 months with medications, categorized as low risk of rejection.

Reporting group title	Obesity

Reporting group description:

Participants with obesity received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Obesity was defined as a BMI >32 kg/m².

Reporting group title	Chronic Cardiovascular Disease

Reporting group description:

Participants with chronic cardiovascular disease received SARS-CoV-2 mRNA vaccine CVnCoV 12 µg on Day 1 and Day 29. Chronic cardiovascular disease included heart failure, structural heart disorder, coronary artery disease, cardiomyopathies and arterial hypertension.

Serious adverse events	COPD	Chronic Kidney Disease	Chronic HIV Infection
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0
Infections and infestations			
Empyema			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

Serious adverse events	Type 2 Diabetes Mellitus	Renal Transplant	Obesity
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 7 (14.29%)	0 / 2 (0.00%)	0 / 52 (0.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0
Infections and infestations			
Empyema			
subjects affected / exposed	1 / 7 (14.29%)	0 / 2 (0.00%)	0 / 52 (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

Serious adverse events	Chronic Cardiovascular Disease		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 33 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		
Infections and infestations			
Empyema			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences causally related to treatment / all	0 / 0		
deaths causally related to treatment / all	0 / 0		

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

Non-serious adverse events	COPD	Chronic Kidney Disease	Chronic HIV Infection
Total subjects affected by non-serious adverse events			
subjects affected / exposed	1 / 1 (100.00%)	1 / 1 (100.00%)	33 / 33 (100.00%)
Vascular disorders			
Hot flush			
subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	1 / 33 (3.03%)
occurrences (all)	0	1	1
General disorders and administration site conditions			
Chills			
subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	14 / 33 (42.42%)
occurrences (all)	0	2	23
Fatigue			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	22 / 33 (66.67%)
occurrences (all)	0	0	58
Feeling abnormal			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0
Pain			
subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	27 / 33 (81.82%)
occurrences (all)	0	1	41
Pyrexia			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	6 / 33 (18.18%)
occurrences (all)	0	0	8
Swelling			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	2 / 33 (6.06%)
occurrences (all)	0	0	2
Vaccination site pain			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	2 / 33 (6.06%)
occurrences (all)	0	0	3
Malaise			
subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	0 / 33 (0.00%)
occurrences (all)	0	1	0
Immune system disorders			
Seasonal allergy			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0

Reproductive system and breast disorders			
Erectile dysfunction			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0
Respiratory, thoracic and mediastinal disorders			
Cough			
subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	2 / 33 (6.06%)
occurrences (all)	0	1	2
Nasal congestion			
subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	0 / 33 (0.00%)
occurrences (all)	0	2	0
Psychiatric disorders			
Insomnia			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	2 / 33 (6.06%)
occurrences (all)	0	0	2
Injury, poisoning and procedural complications			
Animal bite			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0
Nervous system disorders			
Headache			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	21 / 33 (63.64%)
occurrences (all)	0	0	42
Parosmia			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0
Taste disorder			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0
Ear and labyrinth disorders			
Tinnitus			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	2 / 33 (6.06%)
occurrences (all)	0	0	2
Eye disorders			
Eye pain			

subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	0 / 33 (0.00%)
occurrences (all)	0	2	0
Gastrointestinal disorders			
Diarrhoea			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	9 / 33 (27.27%)
occurrences (all)	0	0	17
Nausea			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	10 / 33 (30.30%)
occurrences (all)	0	0	14
Skin and subcutaneous tissue disorders			
Erythema			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	2 / 33 (6.06%)
occurrences (all)	0	0	2
Pruritus			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	4 / 33 (12.12%)
occurrences (all)	0	0	4
Renal and urinary disorders			
Pollakiuria			
subjects affected / exposed	1 / 1 (100.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	1	0	0
Musculoskeletal and connective tissue disorders			
Arthralgia			
subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	9 / 33 (27.27%)
occurrences (all)	0	1	16
Limb discomfort			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0
Myalgia			
subjects affected / exposed	0 / 1 (0.00%)	1 / 1 (100.00%)	19 / 33 (57.58%)
occurrences (all)	0	1	41
Infections and infestations			
Sinusitis			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	2 / 33 (6.06%)
occurrences (all)	0	0	2
Syphilis			

subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	3 / 33 (9.09%)
occurrences (all)	0	0	3
Urinary tract infection			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0
COVID-19			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	0 / 33 (0.00%)
occurrences (all)	0	0	0
Pharyngitis			
subjects affected / exposed	0 / 1 (0.00%)	0 / 1 (0.00%)	2 / 33 (6.06%)
occurrences (all)	0	0	2

Non-serious adverse events	Type 2 Diabetes Mellitus	Renal Transplant	Obesity
Total subjects affected by non-serious adverse events			
subjects affected / exposed	7 / 7 (100.00%)	2 / 2 (100.00%)	50 / 52 (96.15%)
Vascular disorders			
Hot flush			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
General disorders and administration site conditions			
Chills			
subjects affected / exposed	1 / 7 (14.29%)	1 / 2 (50.00%)	24 / 52 (46.15%)
occurrences (all)	1	2	34
Fatigue			
subjects affected / exposed	7 / 7 (100.00%)	2 / 2 (100.00%)	44 / 52 (84.62%)
occurrences (all)	15	10	142
Feeling abnormal			
subjects affected / exposed	1 / 7 (14.29%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	2	0	0
Pain			
subjects affected / exposed	6 / 7 (85.71%)	2 / 2 (100.00%)	39 / 52 (75.00%)
occurrences (all)	8	3	59
Pyrexia			
subjects affected / exposed	2 / 7 (28.57%)	1 / 2 (50.00%)	14 / 52 (26.92%)
occurrences (all)	2	2	20
Swelling			

subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	4 / 52 (7.69%)
occurrences (all)	0	0	4
Vaccination site pain			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Malaise			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Immune system disorders			
Seasonal allergy			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	3 / 52 (5.77%)
occurrences (all)	0	0	5
Reproductive system and breast disorders			
Erectile dysfunction			
subjects affected / exposed	1 / 7 (14.29%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	2	0	0
Respiratory, thoracic and mediastinal disorders			
Cough			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	2 / 52 (3.85%)
occurrences (all)	0	0	2
Nasal congestion			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Psychiatric disorders			
Insomnia			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Injury, poisoning and procedural complications			
Animal bite			
subjects affected / exposed	1 / 7 (14.29%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	1	0	0
Nervous system disorders			
Headache			
subjects affected / exposed	6 / 7 (85.71%)	2 / 2 (100.00%)	39 / 52 (75.00%)
occurrences (all)	9	8	106
Parosmia			

subjects affected / exposed	1 / 7 (14.29%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	1	0	0
Taste disorder			
subjects affected / exposed	1 / 7 (14.29%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	1	0	0
Ear and labyrinth disorders			
Tinnitus			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Eye disorders			
Eye pain			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Gastrointestinal disorders			
Diarrhoea			
subjects affected / exposed	3 / 7 (42.86%)	0 / 2 (0.00%)	26 / 52 (50.00%)
occurrences (all)	3	0	56
Nausea			
subjects affected / exposed	2 / 7 (28.57%)	1 / 2 (50.00%)	9 / 52 (17.31%)
occurrences (all)	2	2	11
Skin and subcutaneous tissue disorders			
Erythema			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	2 / 52 (3.85%)
occurrences (all)	0	0	2
Pruritus			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	5 / 52 (9.62%)
occurrences (all)	0	0	5
Renal and urinary disorders			
Pollakiuria			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Musculoskeletal and connective tissue disorders			
Arthralgia			
subjects affected / exposed	6 / 7 (85.71%)	1 / 2 (50.00%)	27 / 52 (51.92%)
occurrences (all)	15	2	54
Limb discomfort			

subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	3 / 52 (5.77%)
occurrences (all)	0	0	3
Myalgia			
subjects affected / exposed	7 / 7 (100.00%)	2 / 2 (100.00%)	35 / 52 (67.31%)
occurrences (all)	14	4	68
Infections and infestations			
Sinusitis			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Syphilis			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0
Urinary tract infection			
subjects affected / exposed	1 / 7 (14.29%)	0 / 2 (0.00%)	1 / 52 (1.92%)
occurrences (all)	1	0	1
COVID-19			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	3 / 52 (5.77%)
occurrences (all)	0	0	3
Pharyngitis			
subjects affected / exposed	0 / 7 (0.00%)	0 / 2 (0.00%)	0 / 52 (0.00%)
occurrences (all)	0	0	0

Non-serious adverse events	Chronic Cardiovascular Disease		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	32 / 33 (96.97%)		
Vascular disorders			
Hot flush			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
General disorders and administration site conditions			
Chills			
subjects affected / exposed	20 / 33 (60.61%)		
occurrences (all)	23		
Fatigue			
subjects affected / exposed	25 / 33 (75.76%)		
occurrences (all)	56		

Feeling abnormal subjects affected / exposed occurrences (all)	0 / 33 (0.00%) 0		
Pain subjects affected / exposed occurrences (all)	27 / 33 (81.82%) 40		
Pyrexia subjects affected / exposed occurrences (all)	10 / 33 (30.30%) 11		
Swelling subjects affected / exposed occurrences (all)	0 / 33 (0.00%) 0		
Vaccination site pain subjects affected / exposed occurrences (all)	2 / 33 (6.06%) 2		
Malaise subjects affected / exposed occurrences (all)	0 / 33 (0.00%) 0		
Immune system disorders Seasonal allergy subjects affected / exposed occurrences (all)	0 / 33 (0.00%) 0		
Reproductive system and breast disorders Erectile dysfunction subjects affected / exposed occurrences (all)	0 / 33 (0.00%) 0		
Respiratory, thoracic and mediastinal disorders Cough subjects affected / exposed occurrences (all)	0 / 33 (0.00%) 0		
Nasal congestion subjects affected / exposed occurrences (all)	0 / 33 (0.00%) 0		
Psychiatric disorders Insomnia			

subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
Injury, poisoning and procedural complications			
Animal bite			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
Nervous system disorders			
Headache			
subjects affected / exposed	21 / 33 (63.64%)		
occurrences (all)	44		
Parosmia			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
Taste disorder			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
Ear and labyrinth disorders			
Tinnitus			
subjects affected / exposed	1 / 33 (3.03%)		
occurrences (all)	1		
Eye disorders			
Eye pain			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
Gastrointestinal disorders			
Diarrhoea			
subjects affected / exposed	11 / 33 (33.33%)		
occurrences (all)	18		
Nausea			
subjects affected / exposed	6 / 33 (18.18%)		
occurrences (all)	6		
Skin and subcutaneous tissue disorders			
Erythema			
subjects affected / exposed	1 / 33 (3.03%)		
occurrences (all)	1		
Pruritus			

subjects affected / exposed	5 / 33 (15.15%)		
occurrences (all)	6		
Renal and urinary disorders			
Pollakiuria			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
Musculoskeletal and connective tissue disorders			
Arthralgia			
subjects affected / exposed	15 / 33 (45.45%)		
occurrences (all)	31		
Limb discomfort			
subjects affected / exposed	1 / 33 (3.03%)		
occurrences (all)	1		
Myalgia			
subjects affected / exposed	21 / 33 (63.64%)		
occurrences (all)	39		
Infections and infestations			
Sinusitis			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
Syphilis			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
Urinary tract infection			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		
COVID-19			
subjects affected / exposed	1 / 33 (3.03%)		
occurrences (all)	1		
Pharyngitis			
subjects affected / exposed	0 / 33 (0.00%)		
occurrences (all)	0		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
27 July 2021	Participants who had already received at least 1 CVnCoV dose were asked to remain in the trial for 3 months following their last CVnCoV dose for safety and immunogenicity follow-up. No immunogenicity samples were to be taken after a participant received their first dose of an authorized/licensed COVID-19 vaccine. Sites were to follow the amended Schedule of Activities until the participant reached 3 months of follow-up post last dose of CVnCoV. The follow-up period, including Visit 9/Day 211 and Phone Contact/Day 302, was removed. The timing of the End-of-trial Visit/Day 393 was amended to 3 months post last injection of CVnCoV. Any participants that were in screening at the time of decision taking were considered screen failures and were not to receive CVnCoV vaccination in line with the enrollment halt. No additional screenings were to be performed. Participants were provided with adequate information about the changes to the trial, in accordance with applicable local regulations and in line with the protocol Section 12.4 "Informed Consent."

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? Yes

Date	Interruption	Restart date
18 June 2021	During the trial conduct, a decision was taken to stop further recruitment and place vaccination on hold from 18 June 2021 due to the efficacy results from the pivotal Phase 2b/3 trial CV-NCOV-004 and amend the protocol version 2.0 to clarify that all participants should undergo safety and immunogenicity follow-up for 3 months following the last CVnCoV dose.	-

Notes:

Limitations and caveats

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

Participant recruitment was smaller than planned due to early recruitment halt. The Principal Investigators and CureVac decided to terminate the trial early following a change to the risk/benefit profile.

Notes: