Clinical Study Data Reviewer's Guide

Pfizer Inc.

BioNTech SE

Study BNT162-01

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1. Introduction

1.1 Purpose

This document provides context for tabulation datasets and terminology that benefit from additional explanation beyond the Data Definitions document (define.xml). In addition, this document provides a summary of SDTM conformance findings

1.2 Acronyms

Acronym	Translation
aCRF	Annotated Case Report Form
COVID-19	Coronavirus Disease 2019
eDT	Electronic Data Transfer (e.g. central lab data, ECG vendor data, PK data, etc.)
FIH	first-in-human
HLA	human leukocyte antigen
MedDRA	Medical Dictionary for Regulatory Activities
N/A	Not Applicable
P/B	Prime boost
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SD	Single dose
SRC	Safety Review Committee
TEAEs	Treatment Emergent Adverse Events
WOCBP	Women of childbearing potential

1.3 Study Data Standards and Dictionary Inventory

Standard or Dictionary	Versions Used
SDTM	•SDTM v1.4 •SDTM-IG v3.2
Controlled Terminology	CDISC SDTM Controlled Terminology, 2020-03-27
Data Definitions	Define-XML v2.0
Medications Dictionary	WHODRUG GLOBAL B3 March 1, 2020, SNOMED 2020-09-01, UNII 2020-08-18, MED-RT 2020-10-05
Medical Events Dictionary	MedDRA v23.0
Other standards (optional)	Vaccines Therapeutic Area User Guide v1.1

2. Protocol Description

2.1 Protocol Number and Title

Protocol Number: BNT162-01

Protocol Title:	A Multi-site, Phase I/II, 2-Part, Dose-Escalation Trial Investigating the Safety and Immunogenicity of Four Prophylactic SARS-CoV-2 RNA Vaccines Against COVID-19 Using Different Dosing Regimens in Healthy Adults
Protocol Versions:	CorVAC-BNT162-01_CTP_v1.0_2020-03-24_final.pdf CorVAC-BNT162-01_CTP_v2.0_2020-04-09_final_mod2.pdf CorVAC-BNT162-01_CTP_v3.0_2020-04-17_final.pdf CorVAC-BNT162-01_CTP_v4.0_2020-05-13_final_v1.2.pdf CorVAC-BNT162-01_CTP_v5.0_2020-05-26_final.pdf CorVAC-BNT162-01_CTP_v6.0_2020-06-09.pdf CorVAC-BNT162-01_CTP_v7.0_2020-06-26_final.pdf BNT162-01_CTP_v8.0_2020-07-21.pdf BNT162-01_CTP_v9.0_2020-10-05_final.pdf

There were 8 amendments to the protocol. A detailed description of each amendment, with rationale for change, is provided in the protocol v9.0 under section 10.10. Some changes were also implemented to align data collection and reporting in this trial with the data collection and reporting in other trials with BNT162 vaccines candidates (to facilitate data merging). Some of the critical changes are listed here.

- Allow the assessment of additional intermediate and low dose cohorts for BNT162b modRNA vaccine candidates to support identification of a suitable dose for Phase II/III evaluation.
- Allow the assessment of BNT162b1 modRNA vaccine candidate in elderly subjects, given its favorable safety, tolerability, and immunogenicity profile in younger adults to date and recently available non-human primate immunogenicity data for the BNT162b1 and other modRNA vaccine candidates.
- Plan the assessment of BNT162b2 modRNA vaccine candidate in elderly subjects.
- Allow revision of safety assessment & dose limiting toxicity criteria.
- Add additional for blood draws for explorative biomarker/immunogenicity research purposes.
- BNT162b1 and BNT162b2 are both non-modified uridine RNAs, while BNT162a1 and BNT162c2 are both nucleoside-modified pseudomethyl-uridine containing. This modification is known to impact the extent of innate immune activation at a given dose level, and thus potentially the extent of reactogenicity. Therefore, tolerability data obtained with one of the vaccine variants of each of these pairs may be potentially informative for the respective other one and should be taken in consideration by the SRC for recommendations of lower or interim doses.
- Leftover blood may be used for additional biomarker analysis (blood sampling for research)
- Align diary data collection with other BNT162 studies

2.2 Protocol Design

Four different vaccines (BNT162a1, BNT162b1, BNT162b2, and BNT162c2) will be tested.

This trial has two parts. Part A is for dose ranging with dose escalation and de-escalation plus the evaluation of interim dose levels. It also includes dose ranging in older subjects. Part B is dedicated to recruit expansion cohorts with dose levels which are selected from data generated in Part A.

The vaccines BNT162a1, BNT162b1, BNT162b2, and BNT162c2 will be administered using a P/B regimen. The vaccine BNT162c2 will also be administered using a SD regimen.

The chosen trial design reflects discussion and advice from the Paul-Ehrlich Institute (PEI) obtained in scientific advice meetings held in February, March, and June 2020.

Part A

Trial subjects with the first-in-human [FIH] immunization will be immunized using a sentinel dosing/subject staggering (EMA 2017 guidance "Strategies to Identify and Mitigate Risks for First-in-Human and Early Clinical Trials with Investigational Medicinal Products"). The FIH starting dose and the planned escalation/de-escalation doses are given in Table 1 of protocol version 8. Dose escalation rules have been defined in this protocol to guide dose escalation.

For all cohorts, if the investigator considers necessary, the planned observation periods before proceeding to dose further subjects in the same group may be prolonged by 24 h.

Dose de-escalation in the case of possible vaccine-related toxicities will be guided by the Safety Review Committee (SRC), as required.

In Cohort 1, the sentinel dosing/subject staggering process will be as follows:

- One sentinel subject will be dosed on one day.
- If the dosing in this subject was considered to be safe and well tolerated by the investigator after 24±2 h observation on site, 5 further subjects will be dosed (with intervals of at least 1 h between subjects).
- If the dosing in these 5 subjects was considered to be safe and well tolerated by the investigator based on 48 h data (24±2 h observation on site and phone interview for assessment 48±2 h after immunization; in addition to the available 48±2 h data from the sentinel subject):
    - The remaining 6 subjects in the group will be dosed (with intervals of at least 30 min between subjects).
    - If approved by the SRC, the next planned escalation dose will be initiated. The data assessed by the SRC comprises 48 h data for 6 subjects including observation on site, short summary of phone interview (including statement about diary reports), vital signs, investigator reported local and systemic reactions, TEAEs, solicited local & systemic reactions, blood/clinical laboratory data, and brief physical examination outcome.
    - If approved by the SRC, the planned de-escalation dose in Cohort 3 will be initiated.

For any subsequent dose-escalation cohorts (to doses higher than the maximum already tested for a vaccine candidate), the sentinel/subject staggering process will be as follows:

- Two sentinel subjects will be dosed on one day (with intervals of at least 30 min between subjects).
- If the dosing in these subjects was considered to be safe and well tolerated by the investigator after 24±2 h observation on site, 4 further subjects will be dosed (with intervals of at least 30 min between subjects).
- If the dosing in these 4 subjects was considered to be safe and well tolerated by the investigator based on 48 h data (24±2 h observation on site and phone interview for assessment 48±2 h after immunization; in addition to the available 48 h data from the sentinel subjects):
    - The remaining 6 subjects in the group will be dosed (with intervals of at least 30 min between subjects).
    - If approved by the SRC, the next planned escalation dose (see Table 1) will be initiated. The data assessed by the SRC comprises 48 h data for 6 subjects including observation on site, short summary of phone interview (including statement about diary reports), vital signs, investigator reported local and systemic reactions, TEAEs, solicited local & systemic reactions, blood/clinical laboratory data, and brief physical examination outcome.

The maximum allowed dose for each vaccine candidate is defined in the protocol.

For the planned dose de-escalation cohorts, 12 subjects may be dosed on one day (with intervals of at least 30 min between subjects). The doses in these cohorts in younger adults must be lower than doses than doses that have shown acceptable tolerability in younger adults (based on the data from 12 subjects up until 48 h after the first dose). The same dose will not be administered twice, i.e., in two cohorts.

For BNT162b1 and BNT162b2, administration of the planned 10 µg dose in older subjects (Cohort 8) may start once at least a 30-µg dose has shown acceptable tolerability in younger adults (based on the data from 12 subjects up until 48 h after the boost dose). The dose in Cohort 8 must also be confirmed by the SRC. In Cohort 8, 12 subjects will be dosed using a sentinel dosing/subject staggering (2-4-6) process with intervals of at least 1 h between the first 6 subjects and then at least 30 min intervals for the remaining 6 subjects.

For BNT162b1 and BNT162b2, administration of the planned dose escalation cohorts in older adults (Cohorts 9 and 10), 12 subjects will be dosed using a sentinel dosing/subject staggering (2-4-6) process with intervals of at least 30 min between subjects. The doses planned in these cohorts will only be administered if the dose is confirmed by the SRC.

For the unplanned dose de-escalation cohorts, i.e., where the SRC requests the use of a reduced dose for safety reasons, 12 subjects may be dosed on one day with intervals of at least 30 min between subjects (as for planned de-escalation cohorts).

Note: BNT162b1 and BNT162b2 are modified uridine RNAs, while BNT162a1 and

BNT162c2 are both nucleoside-modified pseudomethyl-uridine containing RNAs. RNA modification is known to impact the extent of innate immune activation at a given dose level, and thus potentially the extent of reactogenicity. Therefore, tolerability data obtained with one of the vaccine variants of each of these pairs may be potentially informative for the respective other one and should be taken in consideration by the SRC for recommendations of lower or interim doses.

In the case that an individual experiences dose limiting toxicities or that the frequency or pattern of AEs within a sub-cohort gives cause for concern, the investigator may request by phone an ad hoc review by the SRC, at any time, before further doses of a given vaccine construct are administered.

Part B

Part B will only be started if approved using a substantial protocol amendment.

Details of Part B will be defined using a protocol amendment after thorough evaluation of immunogenicity and safety data from Part A for each vaccine candidate individually. Part B may be initiated for one or more vaccines while Part A is still ongoing, depending on the available data.

Safety data to be evaluated includes the package used by the SRC to assess individual dose levels and in addition any other safety observations that may be reported until the data cut off. Immunogenicity of all doses will be thoroughly assessed.

The protocol amendment will include a summary of relevant safety and tolerability data collected in Part A. This protocol amendment will also include Part B specific inclusion/exclusion criteria, objectives/endpoints, a description of the planned statistical analyses, and descriptions of any added trial assessments and procedures.

Part B will use a randomized, placebo-controlled design in the likely target population (e.g., higher risk populations such as immunocompromised populations). Part B may employ a surrogate marker as a measure of vaccine efficacy.

2.3 Trial Design Datasets

Are Trial Design datasets included in the submission? - **Yes**

Dataset	Dataset Label
TA	Trial Arms
TE	Trial Elements
TV	Trial Visits
TI	Trial Inclusion/Exclusion Criteria
TS	Trial Summary

2.3.1 TA - Trial Arms

Subjects are randomly assigned to receive either BNT162b1 or BNT162b2.

The detailed information for ARM and ARMCD is shown in the table below.

ARM	ARMCD
BNT162b1 Cohort 01 10 ug	BNT162b1-01-10
BNT162b1 Cohort 02 30 ug	BNT162b1-02-30
BNT162b1 Cohort 03 1 ug	BNT162b1-03-1
BNT162b1 Cohort 04 60 ug	BNT162b1-04-60
BNT162b1 Cohort 05 50 ug	BNT162b1-05-50
BNT162b1 Cohort 06 3 ug	BNT162b1-06-3
BNT162b1 Cohort 07 20 ug	BNT162b1-07-20
BNT162b1 Cohort 08 10 ug	BNT162b1-08-10
BNT162b1 Cohort 09 20 ug	BNT162b1-09-20
BNT162b1 Cohort 10 30 ug	BNT162b1-10-30
BNT162b2 Cohort 01 10 ug	BNT162b2-01-10
BNT162b2 Cohort 02 30 ug	BNT162b2-02-30
BNT162b2 Cohort 03 1 ug	BNT162b2-03-1
BNT162b2 Cohort 05 20 ug	BNT162b2-05-20
BNT162b2 Cohort 06 3 ug	BNT162b2-06-3
BNT162b2 Cohort 08 10 ug	BNT162b2-08-10
BNT162b2 Cohort 09 20 ug	BNT162b2-09-20
BNT162b2 Cohort 10 30 ug	BNT162b2-10-30

2.3.2 TE - Trial Elements

There are 27 Elements. SCRN refers to Screening Element; PREDOSE refers to Pre-dose assessments Element; FUP represents the safety follow up Element; and VXB1C1P, VXB1C1B, VXB1C2P, VXB1C2B, VXB1C3P, VXB1C3B, VXB1C4P, VXB1C4B, VXB1C5P, VXB1C5B, VXB1C6P, VXB1C6B, VXB1C7P, VXB1C7B, VXB1C8P, VXB1C8B, VXB1C9P, VXB1C9B, VXB1C10P, VXB1C10B, VXB2C1P, VXB2C1B VXB2C2P, VXB2C2B, VXB2C3P, VXB2C3B, VXB2C5P, VXB2C5B, VXB2C6P, VXB2C6B, VXB2C8P, VXB2C8B, VXB2C9P, VXB2C9B, VXB2C10P, VXB2C10B represent Treatment Elements.

2.3.3 TV - Trial Visits

The trial visits dataset describes the planned visits of the trial and consists of 12 visits. Each visit and visit description are shown in the table below.

VISITNUM	VISIT	VISITDY	Description
1	Visit 0 (Day -30 to 0)		Informed consent and Screening begin up to 0 to 30 days prior to dosing
2	Visit 1 (Day 1)	1	Baseline records and vaccination administration (Day 1)
3	Visit 2 (Day 2)	2	22 to 26 hours from first vaccination
4	Phone Call (48 h)		46 to 50 hours after visit 1
5	Visit 3 (Day 8)	8	7 to 9 days after visit 1
6	Visit 4 / Dosing (Day 22)	22	20 to 24 days after visit 1
6.1	Phone Call (48 h after Day 22)		46 to 50 hours after visit 4
7	Visit 5 (Day 29)	29	7 days after visit 4
8	Visit 6 (Day 43)	43	21 days after visit 4
9	Visit 7 / EoT Visit (Day 50)	50	Start of end of treatment visit (28 days after visit 4)
10	Visit 8 / FU Visit (Day 85)	85	Follow-up visit (63 days after visit 4)
11	Visit 9 / FU Visit (Day 184)	184	Follow-up visit (162 days after visit 4)

2.3.4 TI - Trial Inclusion/Exclusion Criteria

See Appendix I for complete Inclusion/Exclusion criteria. Criteria in TI have been shortened to a length of 200 from protocol text. Criteria with the text '_1' appended correspond to original protocol criteria which were later amended in version 2.0, prior to the first collection of data in the CRF. Criteria with a letter appended (e.g. 'EX24A') correspond to original protocol criteria which were later removed in version 2.0. If the criterion changed in meaning or was inserted from one version of the protocol to the next, additional observations with the corresponding IETESTCD are created in TI. The variable TIVERS indicates the version of the protocol to which the criterion belongs.

2.3.5 TS - Trial Summary

The Trial Summary (TS) dataset details a summary of the trial in a structured format. Each record in the Trial Summary dataset contains the value of a parameter, a characteristic of the trial. Trial Summary was used to record basic information about the study such as trial phase, protocol title, and trial objectives, as well as, information about the planned and actual trial characteristics.

3. Subject Data Description

3.1 Overview

The CSR data is based on the ongoing study. The study SDTMs are based on final database and represent all data collected for a subject across the study visits. Datasets include data that were collected on case report forms (CRFs) and were sourced as eDT. The collected data were transformed to SDTM conformed standards by following the SDTM IG v3.2 and were verified using the Pinnacle 21 Enterprise 4.1.4 tool. The SDTM datasets were utilized to generate the study ADaM datasets per ADaM IG 1.0.

Are the submitted data taken from an ongoing study? Yes

If yes, describe the data cut or database status:

Data cutoff date of 23Oct2020 is applied by comparing XXDTC or XXSTDC from respective SDTM domains. Apart from data cutoff this esub is limited to cohorts described in the section 2.3.1

Were the SDTM datasets used as sources for the analysis datasets? Yes

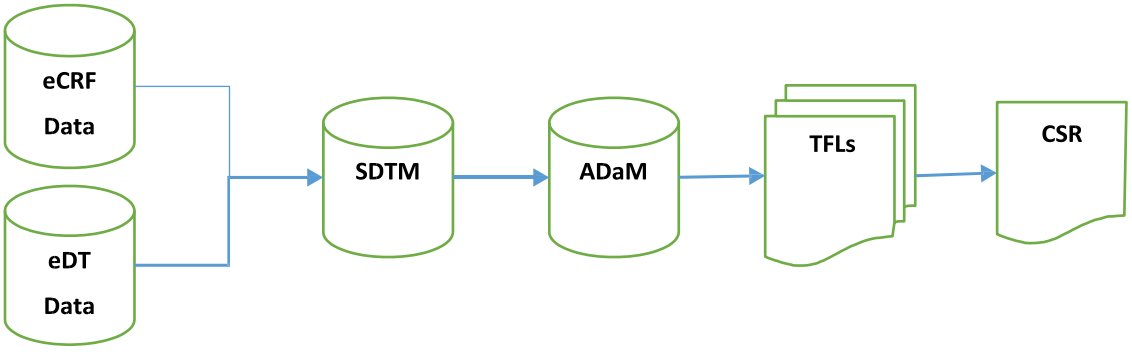
Do the submission datasets include screen failures? **No**

Were any domains planned, but not submitted because no data were collected? Yes

Dataset	Dataset Label
IE	Inclusion/Exclusion Criteria Not Met
DD	Death Details

Are the submitted data a subset of collected data? No

3.2 Traceability Flow Diagram



3.3 Annotated CRFs

Collected fields and pages that have not been tabulated have been annotated as "Not Submitted". BioNTech SE collects certain data elements to facilitate operational processes including data cleaning and dynamically creating additional forms in the electronic data capture system. All fields and pages that have been annotated as "Not Submitted" meet this criterion.

Explanation of data fields [Not Submitted]

aCRF page Number(s)	Data Collection Field	Explanation of why [NOT SUBMITTED]
1	Was the subject re-screened ?	Not needed for analysis.
3	BMI (calculated) (kg/m²)	BMI is derived in VS dataset .
4	Childbearing potential=N/A	Not needed for analysis.
5,24	Specimen=N/A	Not needed for analysis.
6,15	/Abnormal/ND and Finding (calculated)	Abnormal results are captured in PEORRES values and N/D and Findings(calculated) is not needed for analysis.
14	Subject meets all inclusion criteria and does not meet any exclusion criteria	Not needed for analysis.
19	Entire page: Blood sample for CMI	Not needed for analysis.
20	Scheduled time	Not needed for analysis.
22,23,29,31,33	Test Name	Not needed for analysis.
24	Phone call visit N/A	Phone call visits valid only for first 6 subjects per cohort and rest will be N/A which is not used for analysis
25	Trial fully completed =No	Not needed for analysis.
27	Any Medical History ? Yes/ No	Not needed for analysis.
34	Any Adverse Events? Yes/No	Not needed for analysis.
34,36	Start Time unkn.	Not needed for analysis.
34,36	End Time unkn.	Not needed for analysis.
34,36	Ongoing=No	Not needed for analysis.
36	Any prior/concomitant medication/therapy?	Not needed for analysis.
37	Any Comments? Yes/No	Not needed for analysis.
38	Any Protocol Deviations? Yes/No	Not needed for analysis.

aCRF page Number(s)	Data Collection Field	Explanation of why [NOT SUBMITTED]
39,41	Specimen	Not needed for analysis.

3.4 SDTM Subject Domains

Dataset - Dataset Label	Efficacy	Safety	Other	Custom	SUPP--	Related Using RELREC
AE - Adverse Events		X			X	
CE - Clinical Events		X				FACE VS
CM - Concomitant/Prior Medications			X		X	
CO - Comments			X			
DM - Demographics			X		X	
DS - Disposition			X		X	
DV - Protocol Deviations					X	
EC - Exposure as Collected			X		X	
EG - ECG Test Results					X	
EX - Exposure			X		X	
FACE - Findings About Clinical Events	X				X	
IS - Immunogenicity Specimen Assessments	X					
LB - Laboratory Test Results		X			X	
MB - Microbiology Specimen	X					
MH - Medical History		X				
PE - Physical Examination		X			X	
RP - Reproductive System Findings		X			X	
SE - Subject Elements			X			
SV - Subject Visits			X			
VS - Vital Signs		X			X	CE
XA - Ancillary Analysis and Visit Details				X	X	
XB - HLA Typing	X					

3.4.1 AE - Adverse Events

Adverse Events domain consists of one record per adverse event, per subject. The entry of a "Y" for the serious adverse event variable, AESER, indicates the AE meets the criteria as serious per investigator report and the definition in the CRF guidance. The following additional collected data are in supplemental qualifier.

QNAM	Description
AEEPRELI	Epi/Pandemic Related Indicator
AETRTEM	Treatment Emergent Flag
AE_DLT	Dose limiting Toxicity

3.4.2 CE - Clinical Events

Clinical Events domain consists of one record per reaction per observation period per subject. Following the "flat model" described in the Therapeutic Area Data Standards User Guide for Vaccines, daily diary records are recorded in the FACE and VS domains and summarized in a global event record (one each for the observation period following the prime/boost vaccinations administered), whether or not a reactogenicity event occurred during the assessment interval. While FACE contains records for reaction assessments provided by both the investigator and the study subject (variable FAEVAL), only the study subject assessments (from the subject's diary) are used in the generation of the CE domain. Likewise, only the temperature records in the VS domain which were obtained from the diary data (VSCAT = 'REACTOGENICITY') are used for generating CE.

3.4.3 CM - Concomitant/Prior Medications

Concomitant Medications domain consists of one record per recorded medication occurrence or constant-dosing interval, per subject. The following additional collected data are in supplemental qualifier.

QNAM	Description
AE_NO1	Corresponding AE No 1
AE_NO2	Corresponding AE No 2
AE_NO3	Corresponding AE No 3
CMATC1	ATC Level 1 Description
CMATC1CD	ATC Level 1 Code

QNAM	Description
CMATC2	ATC Level 2 Description
CMATC2CD	ATC Level 2 Code
CMATC3	ATC Level 3 Description
CMATC3CD	ATC Level 3 Code
CMATC4	ATC Level 4 Description
CMATC4CD	ATC Level 4 Code
O_FREQ	Other frequency, specify
O_ROUTE	Other route, specify
O_UNIT	Other unit, specify

3.4.5 DM - Demographics

Demographics domain consists of one record per subject. The following additional collected data are in supplemental qualifier.

QNAM	Description
AGE_M	Add. months to Age in years (months)

3.4.6 DS - Disposition

Disposition domain consists of one record per disposition status or protocol milestone, per subject. The following additional collected data are in supplemental qualifier.

QNAM	Description
COHORT	Subject is allocated to Cohort
DSEPRELI	Epi/Pandemic Related Indicator
GROUP	Subject is allocated to Group
LASTCONT	Date of last visit/contact
PREV_TSN	Previous TSNs
PROTVERS	Protocol Version

3.4.7 DV - Protocol Deviations

Protocol Deviations domain consists of one record per protocol deviation per subject. The following additional collected data are in supplemental qualifier.

QNAM	Description
DVREAS	Reason for Deviation

3.4.8 EC - Exposure as Collected

Exposure as Collected domain consists of one record per protocol-specified study treatment, collected-dosing interval, per subject. The following additional collected data are in supplemental qualifier.

QNAM	Description
ADMNPPSP	Adm. not according to Protocol, specify
ADMPPROT	Administration according to protocol?
ECEPADJI	Epi/Pandemic Related Adjustment Reas Ind
ECREASOC	Reason for Occur Value
MED_NO	Medication Number
TOTDOS	Total Dose given?

3.4.9 EG - ECG Test Results

ECG Test Results domain consists of one record per ECG observation per time point per visit per subject. CRF collected significant findings results are kept under supplement qualifier domain. The following additional collected data are in supplemental qualifier.

QNAM	Description
CODE	Code of ECG Finding
EGCLSIG	Clinically Significant

3.4.10 EX - Exposure

Exposure domain consists of one record per constant dosing interval, per subject. The Exposure domain collected the details of a subject's exposure to protocol-specified study treatment as mentioned in TA section. The following additional collected data are in supplemental qualifier.

QNAM	Description
ADMNPPSP	Adm. not according to Protocol, specify
ADMPPROT	Administration according to protocol?
EXEPADJI	Epi/Pandemic Related Adjustment Reas Ind
EXEPINTI	Epi/Pandemic Related Interrupt Reas Ind
MED_NO	Medication Number
TOTDOS	Total Dose given?

3.4.11 FACE - Findings About Clinical Events

Findings About Clinical Events domain consists of one record per finding (occurrence / severity) per object (reactogenicity event) per reference time point (boost / prime vaccination) per time point (date/time of assessment) per evaluator (investigator / study subject) per subject. Each assessment of a reactogenicity event, whether provided by the investigator or recorded by the subject in a diary, are recorded in this domain and are then summarized (in conjunction with temperature data from the VS domain) in the "flat model" CE domain. The following additional collected data are in supplemental qualifier.

QNAM	Description
STUDYDAY	Reported Study Day of Collection

3.4.12 IS - Immunogenicity Specimen Assessments

Immunogenicity Specimen Assessments domain consists of one record per immunogenicity test per visit per subject. The IS domain collected the result based upon blood samples for immunogenicity presented under ISCAT='IMMUNOGENICITY' only. If no measurements were assessed for the entire visit, a record exists where ISTESTCD=" ISALL" and ISSTAT=" NOT DONE". QNS is Quantity Not Sufficient and has been treated as Not Done. LLOQs to define BLQ as below:
RBD IgG dLIA (COV19_RBD_IGG_LXA): 1.1505 U/mL
S1 IgG dLIA (COV19_S1_IGG_LXA): 1.2665 U/mL
Neutralization 50% (COV2_MNG_SERUM_NT50): 20, (negatives assigned titer of 10)
Neutralization 90% (COV2_MNG_SERUM_NT90): 20, (negatives assigned titer of 10)

3.4.13 LB - Laboratory Test Results

Laboratory Test Results domain consists of one record per analyte per planned time point number per time point reference per visit per subject. Reference range was not applied to the chemistry analyte (LBCAT=CHEMISTRY) 'Follicle Stimulating Hormone' or to the following hematology analytes (LBCAT=HEMATOLOGY) when performed via Microscopy on Blood

Smears (LBMETHOD=MICROSCOPY and LBSPEC=BLOOD SMEAR): Basophils, Eosinophils, Lymphocytes, Lymphocytes Atypical/Leukocytes, Monocytes, Neutrophils, Smudge Cells/Leukocytes. The following additional collected data are in supplemental qualifier.

QNAM	Description
LBCLSIG	Clinically Significant
LBLOINC1	LOINC Code for Identification
LBLOINC2	LOINC Code for second Identification
LBORRES1	Identification for Result
LBORRES2	Second Identification for Result
RBB	Report Blood Count
RBB2	Report Blood Count 2

3.4.14 MB - Microbiology Specimen

Microbiology Specimen domain consists of one record per microbiology specimen finding per time point per visit per subject.

3.4.15 MH - Medical History

Medical History domain consists of one record per medical history event, per subject.

3.4.16 PE - Physical Examination

Physical Examination domain consists of one record per body system or abnormality, per visit, per subject. The following additional collected data are in supplemental qualifier.

QNAM	Description
PECLSIG	Clinically Significant

3.4.17 RP - Reproductive System Findings

Reproductive System Findings domain consists of one record per Reproductive System Finding per time point per visit per subject .The following additional collected data are in supplemental qualifier.

QNAM	Description
OTH_SPEC	Specification for Other Reason

3.4.18 SE - Subject Elements

Subject Element domain consists of one record per actual element per subject.

3.4.19 SV - Subject Visits

Subject Visits domain consists of one record per actual visit per subject.

3.4.20 VS - Vital Signs

Vital Signs dataset consists of one record per vital sign measurement, per time point, per subject. To implement flat model, temperature records from subject diary data are mapped to the VS domain with VSCAT=REACTOGENICITY. If measurements were not collected for VSCAT= 'REACTOGENICITY', a record exists with VSORRES='' and VSSTAT='NOT DONE'. The following additional collected data are in supplemental qualifier.

QNAM	Description
STUDYDAY	Reported Study Day of Collection
VSCLSIG	Clinically Significant

3.4.21 XA - Ancillary Analysis and Visit Details

Ancillary Analysis and Visit Details dataset consists of one record per finding per time point per visit per subject. The following additional collected data are in supplemental qualifier.

QNAM	Description
ACT_TPT	Actual observation period (hours)
REASON	Reason
RES_BS	Blood Sampling for Research Purposes

3.4.22 XB - HLA Typing

HLA Typing dataset consists of one record per finding per time point per subject.

4. Data Conformance Summary

4.1 Conformance Inputs

Was a validator used to evaluate conformance?	**Yes**
If yes, specify the version(s) of the validation rules:	**Pinnacle 21 Enterprise version 4.1.4 Validation Engine version 1907.1**
Were sponsor-defined validation rules used to evaluate conformance?	**No**
If yes, describe any significant sponsor-defined validation rules:	**n/a**
Were the SDTM datasets evaluated in relation to define.xml?	**Yes**
Was define.xml evaluated?	**Yes**
Provide any additional compliance evaluation information:	

4.2 Issues Summary

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
CT2002	CMDOSU value not found in 'Unit' extensible codelist	Warning	CM	8 (2.18%)	Reported as collected; Term similar to 'OTHER' is not present in codelist, and codelist is extensible.
CT2002	CMROUTE value not found in 'Route of Administration Response' extensible codelist	Warning	CM	1 (0.27%)	Reported as collected; Term similar to 'OTHER' is not present in codelist, and codelist is extensible.
CT2002	CMDOSFRQ value not found in 'Frequency' extensible codelist	Warning	CM	8 (2.18%)	Reported as collected; Terms similar to 'OTHER' and 'NOT APPLICABLE' are not present in codelist, and codelist is extensible.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
CT2002	COEVAL value not found in 'Evaluator' extensible codelist	Warning	CO	147 (35.94%)	Reported as collected; Term similar to 'LABORATORY' is not present in codelist, and codelist is extensible.
CT2002	ISORRESU value not found in 'Unit' extensible codelist	Warning	IS	1418 (49.20%)	Codelist is extensible, additional value 'NA' has been added for ISORRESU.
CT2002	ISSTRESU value not found in 'Unit' extensible codelist	Warning	IS	1418 (49.20%)	Codelist is extensible, additional value 'NA' has been added for ISSTRESU.
CT2002	LBSPEC value not found in 'Specimen Type' extensible codelist	Warning	LB	275 (0.45%)	Codelist is extensible, additional value 'BLOOD SMEAR' has been added for LBSPEC.
CT2002	RPTESTCD value not found in 'Reproductive System Findings Test Code' extensible codelist	Warning	RP	75 (31.25%)	RPTESTCD values to represent 'Reason for Non-childbearing potential' (NON_REAS) and 'Date of Sterilization' (STER_DTC) are not present in codelist, and codelist is extensible.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
CT2002	RPTEST value not found in 'Reproductive System Findings Test Name' extensible codelist	Warning	RP	75 (31.25%)	RPTEST values similar to 'Reason for Non-childbearing potential' and 'Date of Sterilization' are not present in codelist, and codelist is extensible.
CT2002	QEVAL value not found in 'Evaluator' extensible codelist	Warning	SUPPCM	2924 (91.72%)	Reported as collected. Value similar to 'MEDICAL CODER' is not present in codelist, and codelist is extensible.
SD0006	No baseline flag record in MB for subject	Warning	DM	37 (17.13%)	For the subjects triggering this issue, records present in the MB domain contain only categorical results (e.g. Negative) for which a baseline flag is not applicable.
SD0021	Missing End Time-Point value	Warning	AE	5 (0.85%)	Reported as collected; Study is ongoing.
SD0021	Missing End Time-Point value	Warning	CE	2 (< 0.1%)	Reported as collected; Study is ongoing.
SD0021	Missing End Time-Point value	Warning	CM	41 (11.17%)	Reported as collected; Study is ongoing.
SD0022	Missing Start Time-Point value	Warning	CE	2 (< 0.1%)	Reported as collected; Study is ongoing.
SD0022	Missing Start Time-Point value	Warning	MH	2 (2.63%)	Start date was not entered. Data provided as collected.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
SD0026	Missing value for RPORRESU, when RPORRES is provided	Warning	RP	48 (100.00%)	A unit is not applicable when RPORRES value is a date.
SD0029	Missing value for RPSTRESU, when RPSTRESC is provided	Warning	RP	48 (100.00%)	A unit is not applicable when RPSTRESC value is a date.
SD0031	Missing values for MHSTDTC, MHSTRF and MHSTRTPT, when MHENDTC, MHENRF or MHENRTPT is provided	Warning	MH	2 (2.63%)	Start date was not entered. Data provided as collected.
SD0047	Missing value for FAORRES, when FASTAT or FADRVFL is not populated	Warning	FA	152 (66.09%)	Result was not entered. Data provided as collected.
SD0047	Missing value for MBORRES, when MBSTAT or MBDRVFL is not populated	Warning	MB	5 (100.00%)	Result was not entered. Data provided as collected.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
SD0080	AE start date is after the latest Disposition date	Error	AE	29 (4.93%)	Reported as collected; Study is ongoing.
SD0082	Exposure end date is after the latest Disposition date	Warning	EX	43 (10.39%)	Study is ongoing.
SD0088	RFENDTC is not provided for a randomized subject	Warning	DM	36 (16.67%)	Study is ongoing.
SD1076	Model permissible variable added into standard domain	Notice	CE	17 (43.59%)	Variables CEHLTCD, CEPTCD, CETPTREF, CEHLT, CEHLGTCD, CEEVINTX, CELNKGRP, CESOC, CETPT, CELLT, CEHLGT, CEBDSYCD, CERFTDTC, CELLTCD, CETPTNUM, CESOCCD, CEDUR added to provide complete information regarding collected data and to provide relationship information between CE, VS, and FACE domains.
SD1076	Model permissible variable added into standard domain	Notice	CO	1 (4.00%)	Variable COVAL1 added to accommodate text longer than 200 characters for COVAL.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
SD1076	Model permissible variable added into standard domain	Notice	EC	2 (9.09%)	Variables VISITNUM and VISIT added to provide complete information regarding collected data.
SD1076	Model permissible variable added into standard domain	Notice	EX	2 (6.90%)	Variables VISITNUM and VISIT added to provide complete information regarding collected data.
SD1076	Model permissible variable added into standard domain	Notice	FA	8 (15.09%)	Variables FARFTDTC, FAEVLINT, FALNKGRP, FATPT, FATPTREF, FALNKID, FAEVINTX, FATPTNUM added to provide complete information regarding collected data and to provide relationship information between CE and FACE domains.
SD1076	Model permissible variable added into standard domain	Notice	MB	5 (12.50%)	Variables MBORNRHI, MBSTNRC, MBNRIND, MBTSTDTL, MBSTNRHI added to provide complete information regarding data provided by vendor laboratory.
SD1076	Model permissible variable added into standard domain	Notice	MH	10 (23.81%)	Variables MHHLGTCD, MHLLT, MHSOCCD, MHHLTCD, MHPTCD, MHHLGT, MHLLTCD, MHBDSYCD, MHSOC, MHHLT added to provide complete information regarding collected data.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
SD1076	Model permissible variable added into standard domain	Notice	TS	2 (20.00%)	Variable TSVAL1, TSVAL2 added to accommodate text longer than 200 characters for TSVAL.
SD1076	Model permissible variable added into standard domain	Notice	VS	2 (4.55%)	Variables VSLNKID and VSLNKGRP added to provide relationship information between the CE and VS domains.
SD1078	Permissible variable with missing value for all records	Notice	AE	5 (29.41%)	Fields on the acrf are annotated to these variables (AESDISAB, AESLIFE, AESCONG, AESMIE, AESDTH), but no information has been entered into these fields to date.
SD1078	Permissible variable with missing value for all records	Notice	CM	2 (14.29%)	Fields on the acrf are annotated to these variables (CMENTPT and CMENRTPT), but no information has been entered into these fields to date.
SD1078	Permissible variable with missing value for all records	Notice	EG	2 (18.18%)	Fields on the acrf are annotated to these variables (EGSTAT and EGREASND), but no information has been entered into these fields to date.
SD1078	Permissible variable with missing value for all records	Notice	IS	1 (10.00%)	ISMETHOD provided with vendor data, but not currently populated. Study is ongoing.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
SD1078	Permissible variable with missing value for all records	Notice	LB	2 (16.67%)	Fields on the acrf are annotated to these variables (LBSTAT and LBREASND), but no information has been entered into these fields to date.
SD1078	Permissible variable with missing value for all records	Notice	MB	2 (14.29%)	Fields on the acrf are annotated to these variables (MBSTAT and MBREASND), but no information has been entered into these fields to date.
SD1117	Duplicate records	Warning	FA	2 (< 0.1%)	FACE contains similar records for "NOT DONE" reports of data collection. When using the Key Variables provided in the define, records are unique.
SD1122	Missing value for RPSTRESN	Warning	RP	48 (100.00%)	RPSTRESC represents a date and should therefore not be reported as a numeric value.
SD1201	Duplicate records in AE domain	Warning	AE	1 (0.17%)	The record triggering this issue was mapped to two MedDRA Lower-Level Terms. When using the Key Variables provided in the define, records are unique.
SD1201	Duplicate records in CE domain	Warning	CE	1889 (30.42%)	CE contains similar records for each of the two dosing periods (identified by dosing date/time variable CERFTDTC). When using the Key Variables provided in the define, records are unique.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
SD1201	Duplicate records in DV domain	Warning	DV	23 (11.27%)	The same deviation is recorded for multiple assessments on the same date. DVSEQ provides uniqueness in this domain.
SD1203	CODTC date is after RFPENDTC	Error	CO	3 (23.08%)	Reported as collected; Comment regarding subject provided after subject's participation in trial was complete.
SD1229	MBORRES value is null when MBTESTCD = 'SARSCOV2'	Error	MB	5 (2.02%)	Result was not entered. Data provided as collected.
SD1272	PETESTCD equals 'OTHER'	Warning	PE	2 (< 0.1%)	Reported as captured on CRF. Provides best representation of collected data.
SD1290	Multiple disposition events for the same EPOCH	Error	DS	1 (0.54%)	Subject BNT162-01-276-02-0183 completed treatment (was administered both vaccines) but discontinued before completing FOLLOW-UP epoch.
SD1312	TSVAL is missing for the PCLAS Trial Summary Parameter, when STYPE parameter equals 'INTERVENTIONAL'	Error	TS	1 (100.00%)	Study involves novel treatments which are not registered in FDA Substance Registration System (SRS).

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
SD1319	DSSTDTC is before RFICDTC	Error	DS	18 (1.76%)	For the subjects triggering this issue, rescreening occurred and RFICDTC is set to the date of informed consent which was signed at final screening.
SD1320	Missing value for FASTRESC, when FASTAT is null	Warning	FA	152 (0.11%)	Reported as collected; Study is ongoing.
SD1320	Missing value for MBSTRESC, when MBSTAT is null	Warning	MB	5 (0.34%)	Result was not entered. Data provided as collected.
SD1339	Missing EPOCH value, when a start or observation date is provided	Warning	CM	3 (0.89%)	Medications were started prior to the patient's SCREENING epoch and are therefore not assigned an EPOCH value.
SD1344	Value for CMDECOD not found in WHODrug dictionary	Error	CM	1 (0.27%)	Due to ongoing Study, mapping for CMDECOD=ETHINYLESTRADIOL;ETONOGESTREL ETHINYLESTRADIOL;ETONOGESTREL for USUBJID=BNT162-01-276-02-0177 was not aligned with dictionary at the time of data cut.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
SD2260	Invalid TSVAL value for TRT	Error	TS	2 (100.00%)	Study involves novel treatments which are not registered in FDA Substance Registration System (SRS).
SD2261	Invalid TSVALCD value for TRT	Error	TS	2 (100.00%)	Study involves novel treatments which are not registered in FDA Substance Registration System (SRS).
TS0050	Missing PC dataset	Warning	GLOBAL	1 (100.00%)	Pharmacokinetic data is not captured in this protocol.
TS0051	Missing PP dataset	Warning	GLOBAL	1 (100.00%)	Pharmacokinetic data is not captured in this protocol.
TS0057	LBSTRESN is populated but LBSTNRHI is not populated	Warning	LB	213 (0.51%)	A reference range was not applied to the chemistry analyte (LBCAT=CHEMISTRY) 'Follicle Stimulating Hormone' or to the following hematology analytes (LBCAT=HEMATOLOGY) when performed via Microscopy on Blood Smears (LBMETHOD=MICROSCOPY and LBSPEC=BLOOD SMEAR): Basophils, Eosinophils, Lymphocytes, Lymphocytes Atypical/Leukocytes, Monocytes, Neutrophils, Smudge Cells/Leukocytes.

Check ID	Diagnostic Message	FDA Severity	Dataset	Count (Issue Rate)	Explanation
DD0050	Domain/SAS DatasetName mismatch for split dataset	Error	DEFINE	1 (100.00%)	The "flat model" described in the Vaccines Therapeutic Area User Guide has been utilized for reactogenicity data in this study. To clearly indicate that the data contained in the "Findings About" domain is wholly that of reactogenicity findings, sponsor has chosen to utilize the names FACE and SUPPFACE, even though there is no split of the FA / SUPPFA domains.
DD0116	FATESTCD/ FATEST mismatch in Codelist 'Vaccines Findings About Test Code'	Notice	DEFINE	1 (100.00%)	While the FATESTCD = 'OCCUR' records do provide findings related to the CEOCCUR qualifier variable, the use of FATEST = 'Occurrence' is not aligned with the Vaccines Finding About Test Name (VNFATS) Controlled Terminology which has been applied to the FATEST variable.

Appendix I: Inclusion/Exclusion Criteria

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
1.0	Inclusion	IN01	Have given informed consent by signing the ICF before initiation of any trial-specific procedures.
1.0	Inclusion	IN02_1	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions, and other requirements of the trial.
1.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.
1.0	Inclusion	IN04_1	They must be aged 18 ≤ 55 years and weigh at least 50 kg at Visit 0.
1.0	Inclusion	IN05	They must be healthy based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0.
1.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin in urine at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.
1.0	Inclusion	IN07	WOCBP must agree to practice one highly effective form of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
1.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
1.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
1.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
1.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
1.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
1.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
1.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
1.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
1.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years, which in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
1.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
1.0	Exclusion	EX06	Had any chronic use (more than 14 continuous days) of any systemic medications, including immunosuppressant or other immune-modifying drugs, within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocol-specified assessments or could compromise subject safety.
1.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
1.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
1.0	Exclusion	EX09	Had administration of another investigational product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
1.0	Exclusion	EX10_1	Have a known history or a positive test of any of the following: HIV 1 or 2, Hepatitis B, Hepatitis C.
1.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
1.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
1.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
1.0	Exclusion	EX15	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial.
1.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).
1.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions, which in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
1.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
1.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
1.0	Exclusion	EX20	Have a history of narcolepsy.
1.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.
1.0	Exclusion	EX22	Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
1.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.
1.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
1.0	Exclusion	EX24A	They were in any country with a high SARS-CoV-2 infection risk (as defined by the RKI at the time Visit 0) within the 14 d prior to Visit 0.
1.0	Exclusion	EX24B	They plan to visit any country with a high SARS-CoV-2 infection risk (as defined by the RKI at the time Visit 0), from Visit 0 until 14 d after receiving the last immunization.
1.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
1.0	Exclusion	EX25A	(Once commercially available in Germany) Have a positive test for anti-SARS-CoV-2 antibodies.
1.0	Exclusion	EX26	Have had contact with persons tested positive for SARS-CoV-2 antibodies within the 30 d prior to Visit 0.
1.0	Exclusion	EX27_1	Are vulnerable persons, i.e., soldiers, subjects in detention, CRO or sponsor staff or their family members.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
2.0	Inclusion	IN01	Have given informed consent by signing the ICF before initiation of any trial-specific procedures.
2.0	Inclusion	IN02	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions (e.g., to practice social distancing and to follow good practices to reduce their chances of being infected or spreading COVID-19), and other requirements of the trial.
2.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.
2.0	Inclusion	IN04	They must be aged from 18 to 55 years, have a body mass index of over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0.
2.0	Inclusion	IN05	They must be healthy based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0.
2.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin in urine at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.
2.0	Inclusion	IN07	WOCBP must agree to practice one highly effective form of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
2.0	Inclusion	IN08	WOCBP must confirm that they practiced one highly effective form of contraception for the 14 d prior to Visit 0.
2.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
2.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
2.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
2.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
2.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
2.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
2.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
2.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
2.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years, which in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
2.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
2.0	Exclusion	EX06	Had any chronic use (more than 14 continuous days) of any systemic medications, including immunosuppressant or other immune-modifying drugs, within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocol-specified assessments or could compromise subject safety.
2.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
2.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
2.0	Exclusion	EX09	Had administration of another investigational product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
2.0	Exclusion	EX10	Have a known history or a positive test of any of HIV 1 or 2, Hepatitis B, or Hepatitis C, within the 30 d prior to Visit 0.
2.0	Exclusion	EX11	Have a positive PCR-based test for anti-SARS-CoV-2 within the 30 d prior to Visit 0.
2.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
2.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
2.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
2.0	Exclusion	EX15	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial.
2.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
2.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions, which in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
2.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
2.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
2.0	Exclusion	EX20	Have a history of narcolepsy.
2.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.
2.0	Exclusion	EX22	Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
2.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.
2.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
2.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
2.0	Exclusion	EX26	Have had contact with persons tested positive for SARS-CoV-2 antibodies within the 30 d prior to Visit 0.
2.0	Exclusion	EX27	Are soldiers, subjects in detention, CRO or sponsor staff or their family members.
3.0	Inclusion	IN01_3	Have given informed consent by signing the informed consent form (ICF) before initiation of any trial-specific procedures.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
3.0	Inclusion	IN02	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions (e.g., to practice social distancing and to follow good practices to reduce their chances of being infected or spreading COVID-19), and other requirements of the trial.
3.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.
3.0	Inclusion	IN04	They must be aged from 18 to 55 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0.
3.0	Inclusion	IN05	They must be healthy based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0.
3.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin urine test at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.
3.0	Inclusion	IN07_3	WOCBP must agree to practice two highly effective forms of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
3.0	Inclusion	IN08_3	WOCBP must confirm that they practiced at least one highly effective form of contraception for the 14 d prior to Visit 0.
3.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
3.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
3.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
3.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
3.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
3.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
3.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
3.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
3.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
3.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
3.0	Exclusion	EX06	Had any chronic use (more than 14 continuous days) of any systemic medications, including immunosuppressant or other immune-modifying drugs, within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocol-specified assessments or could compromise subject safety.
3.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
3.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
3.0	Exclusion	EX09	Had administration of another investigational product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
3.0	Exclusion	EX10	Have a known history or a positive test of any of HIV 1 or 2, Hepatitis B, or Hepatitis C, within the 30 d prior to Visit 0.
3.0	Exclusion	EX11_3	Have a positive PCR-based test for SARS-CoV-2 within the 30 d prior to Visit 1.
3.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
3.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
3.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
3.0	Exclusion	EX15	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial.
3.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
3.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
3.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
3.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
3.0	Exclusion	EX20	Have a history of narcolepsy.
3.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.
3.0	Exclusion	EX22	Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
3.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.
3.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
3.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
3.0	Exclusion	EX26	Have had contact with persons diagnosed with COVID-19 or who tested positive for SARS-CoV-2 by any diagnostic test within the 30 d prior to Visit 1.
3.0	Exclusion	EX27	Are soldiers, subjects in detention, CRO or sponsor staff or their family members.
4.0	Inclusion	IN01_3	Have given informed consent by signing the informed consent form (ICF) before initiation of any trial-specific procedures.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
4.0	Inclusion	IN02	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions (e.g., to practice social distancing and to follow good practices to reduce their chances of being infected or spreading COVID-19), and other requirements of the trial.
4.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.
4.0	Inclusion	IN04	They must be aged from 18 to 55 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0.
4.0	Inclusion	IN05	They must be healthy based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0.
4.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin urine test at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.
4.0	Inclusion	IN07_4	WOCBP must agree to practice a highly effective form of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
4.0	Inclusion	IN08_3	WOCBP must confirm that they practiced at least one highly effective form of contraception for the 14 d prior to Visit 0.
4.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
4.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
4.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
4.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
4.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
4.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
4.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
4.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
4.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
4.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
4.0	Exclusion	EX06_4	Had any chronic use (more than 14 continuous days) of any systemic medications, including immunosuppressant's or other immune-modifying drugs, within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocol-specified assessments or could compromise subject safety.
4.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
4.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
4.0	Exclusion	EX09_4	Had administration of another investigational medicinal product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
4.0	Exclusion	EX10	Have a known history or a positive test of any of HIV 1 or 2, Hepatitis B, or Hepatitis C, within the 30 d prior to Visit 0.
4.0	Exclusion	EX11_3	Have a positive PCR-based test for SARS-CoV-2 within the 30 d prior to Visit 1.
4.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
4.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
4.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
4.0	Exclusion	EX15	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial.
4.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
4.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
4.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
4.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
4.0	Exclusion	EX20	Have a history of narcolepsy.
4.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.
4.0	Exclusion	EX22	Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
4.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.
4.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
4.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
4.0	Exclusion	EX26	Have had contact with persons diagnosed with COVID-19 or who tested positive for SARS-CoV-2 by any diagnostic test within the 30 d prior to Visit 1.
4.0	Exclusion	EX27	Are soldiers, subjects in detention, CRO or sponsor staff or their family members.
5.0	Inclusion	IN01_3	Have given informed consent by signing the informed consent form (ICF) before initiation of any trial-specific procedures.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
5.0	Inclusion	IN02	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions (e.g., to practice social distancing and to follow good practices to reduce their chances of being infected or spreading COVID-19), and other requirements of the trial.
5.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.
5.0	Inclusion	IN04	They must be aged from 18 to 55 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0.
5.0	Inclusion	IN05	They must be healthy based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0.
5.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin urine test at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.
5.0	Inclusion	IN07_4	WOCBP must agree to practice a highly effective form of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
5.0	Inclusion	IN08_3	WOCBP must confirm that they practiced at least one highly effective form of contraception for the 14 d prior to Visit 0.
5.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
5.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
5.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
5.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
5.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
5.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
5.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
5.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
5.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
5.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
5.0	Exclusion	EX06_4	Had any chronic use (more than 14 continuous days) of any systemic medications, including immunosuppressant's or other immune-modifying drugs, within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocol-specified assessments or could compromise subject safety.
5.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
5.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
5.0	Exclusion	EX09_4	Had administration of another investigational medicinal product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
5.0	Exclusion	EX10	Have a known history or a positive test of any of HIV 1 or 2, Hepatitis B, or Hepatitis C, within the 30 d prior to Visit 0.
5.0	Exclusion	EX11_3	Have a positive PCR-based test for SARS-CoV-2 within the 30 d prior to Visit 1.
5.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
5.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
5.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
5.0	Exclusion	EX15	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial.
5.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
5.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
5.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
5.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
5.0	Exclusion	EX20	Have a history of narcolepsy.
5.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.
5.0	Exclusion	EX22	Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
5.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.
5.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
5.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
5.0	Exclusion	EX26	Have had contact with persons diagnosed with COVID-19 or who tested positive for SARS-CoV-2 by any diagnostic test within the 30 d prior to Visit 1.
5.0	Exclusion	EX27	Are soldiers, subjects in detention, CRO or sponsor staff or their family members.
6.0	Inclusion	IN01_3	Have given informed consent by signing the informed consent form (ICF) before initiation of any trial-specific procedures.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
6.0	Inclusion	IN02	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions (e.g., to practice social distancing and to follow good practices to reduce their chances of being infected or spreading COVID-19), and other requirements of the trial.
6.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.
6.0	Inclusion	IN04_6	They must be aged from 18 to 55 years (Cohorts 1 to 8) or be aged 65 to 85 years (elderly subject cohorts), have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0.
6.0	Inclusion	IN05	They must be healthy based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0.
6.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin urine test at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.
6.0	Inclusion	IN07_4	WOCBP must agree to practice a highly effective form of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
6.0	Inclusion	IN08_3	WOCBP must confirm that they practiced at least one highly effective form of contraception for the 14 d prior to Visit 0.
6.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
6.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
6.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
6.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
6.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
6.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
6.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
6.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
6.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
6.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
6.0	Exclusion	EX06_4	Had any chronic use (more than 14 continuous days) of any systemic medications, including immunosuppressant's or other immune-modifying drugs, within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocol-specified assessments or could compromise subject safety.
6.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
6.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
6.0	Exclusion	EX09_4	Had administration of another investigational medicinal product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
6.0	Exclusion	EX10	Have a known history or a positive test of any of HIV 1 or 2, Hepatitis B, or Hepatitis C, within the 30 d prior to Visit 0.
6.0	Exclusion	EX11_3	Have a positive PCR-based test for SARS-CoV-2 within the 30 d prior to Visit 1.
6.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
6.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
6.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
6.0	Exclusion	EX15	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial.
6.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
6.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
6.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
6.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
6.0	Exclusion	EX20	Have a history of narcolepsy.
6.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.
6.0	Exclusion	EX22	Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
6.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.
6.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
6.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
6.0	Exclusion	EX26	Have had contact with persons diagnosed with COVID-19 or who tested positive for SARS-CoV-2 by any diagnostic test within the 30 d prior to Visit 1.
6.0	Exclusion	EX27	Are soldiers, subjects in detention, CRO or sponsor staff or their family members.
7.0	Inclusion	IN01_3	Have given informed consent by signing the informed consent form (ICF) before initiation of any trial-specific procedures.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
7.0	Inclusion	IN02	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions (e.g., to practice social distancing and to follow good practices to reduce their chances of being infected or spreading COVID-19), and other requirements of the trial.
7.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.
7.0	Inclusion	IN04_7	For younger subject cohorts, volunteers must be aged 18 to 55 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0. OR For older adult cohorts, volunteers must be aged 56 to 85 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0.
7.0	Inclusion	IN05_7	They must be healthy, in the clinical judgment of the investigator, based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0. Note: Healthy volunteers with pre-existing stable disease, defined as disease not requiring significant change in therapy or hospitalization for worsening disease during the 6 weeks before enrollment, can be included.
7.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin urine test at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.
7.0	Inclusion	IN07_7	WOCBP must agree to practice a highly effective form of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization. WOCBP must agree to require their male partners to use condoms during sexual contact (unless male partners are sterilized or infertile).

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
7.0	Inclusion	IN08_3	WOCBP must confirm that they practiced at least one highly effective form of contraception for the 14 d prior to Visit 0.
7.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
7.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
7.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
7.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
7.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
7.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
7.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
7.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
7.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
7.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
7.0	Exclusion	EX06_7	Had any chronic use (more than 21 continuous days) of any systemic medications, including immunosuppressant's or other immune-modifying drugs, within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocol-specified assessments or could compromise subject safety. Note: Healthy participants with preexisting stable disease, defined as disease not requiring significant change in therapy or hospitalization for worsening disease during the 6 weeks before enrollment, can be included.
7.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
7.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
7.0	Exclusion	EX09_4	Had administration of another investigational medicinal product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
7.0	Exclusion	EX10	Have a known history or a positive test of any of HIV 1 or 2, Hepatitis B, or Hepatitis C, within the 30 d prior to Visit 0.
7.0	Exclusion	EX11_3	Have a positive PCR-based test for SARS-CoV-2 within the 30 d prior to Visit 1.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
7.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
7.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
7.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
7.0	Exclusion	EX15	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial.
7.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).
7.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
7.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
7.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
7.0	Exclusion	EX20	Have a history of narcolepsy.
7.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.
7.0	Exclusion	EX22	Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
7.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
7.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
7.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
7.0	Exclusion	EX26	Have had contact with persons diagnosed with COVID-19 or who tested positive for SARS-CoV-2 by any diagnostic test within the 30 d prior to Visit 1.
7.0	Exclusion	EX27	Are soldiers, subjects in detention, CRO or sponsor staff or their family members.
7.0	Exclusion	EX28	Regular receipt of inhaled/nebulized corticosteroids.
7.0	Exclusion	EX29	For older adults only: Have a condition known to put them at high risk for severe COVID-19, including those with any of the following risk factors: Hypertension, Diabetes mellitus, Chronic pulmonary disease, Asthma, Chronic liver disease, Known Stage 3 or worse chronic kidney disease (glomerular filtration rate <60 mL/min/1.73 m2), BMI >= 30 kg/m2, Anticipating the need for immunosuppressive treatment within the next 6 months, Resident in a long-term facility, Current vaping or smoking (occasional smoking is acceptable), History of chronic smoking within the prior year.
8.0	Inclusion	IN01_3	Have given informed consent by signing the informed consent form (ICF) before initiation of any trial-specific procedures.
8.0	Inclusion	IN02	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions (e.g., to practice social distancing and to follow good practices to reduce their chances of being infected or spreading COVID-19), and other requirements of the trial.
8.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
8.0	Inclusion	IN04_7	For younger subject cohorts, volunteers must be aged 18 to 55 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0. OR For older adult cohorts, volunteers must be aged 56 to 85 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0.
8.0	Inclusion	IN05_7	They must be healthy, in the clinical judgment of the investigator, based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0. Note: Healthy volunteers with pre-existing stable disease, defined as disease not requiring significant change in therapy or hospitalization for worsening disease during the 6 weeks before enrollment, can be included.
8.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin urine test at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.
8.0	Inclusion	IN07_7	WOCBP must agree to practice a highly effective form of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization. WOCBP must agree to require their male partners to use condoms during sexual contact (unless male partners are sterilized or infertile).
8.0	Inclusion	IN08_3	WOCBP must confirm that they practiced at least one highly effective form of contraception for the 14 d prior to Visit 0.
8.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
8.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
8.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
8.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
8.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
8.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
8.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
8.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
8.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
8.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
8.0	Exclusion	EX06_7	Had any chronic use (more than 21 continuous days) of any systemic medications, including immunosuppressant's or other immune-modifying drugs, within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocol-specified assessments or could compromise subject safety. Note: Healthy participants with preexisting stable disease, defined as disease not requiring significant change in therapy or hospitalization for worsening disease during the 6 weeks before enrollment, can be included.
8.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
8.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
8.0	Exclusion	EX09_4	Had administration of another investigational medicinal product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
8.0	Exclusion	EX10	Have a known history or a positive test of any of HIV 1 or 2, Hepatitis B, or Hepatitis C, within the 30 d prior to Visit 0.
8.0	Exclusion	EX11_3	Have a positive PCR-based test for SARS-CoV-2 within the 30 d prior to Visit 1.
8.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
8.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
8.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
8.0	Exclusion	EX15	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
8.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).
8.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
8.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
8.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
8.0	Exclusion	EX20	Have a history of narcolepsy.
8.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.
8.0	Exclusion	EX22	Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
8.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.
8.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
8.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
8.0	Exclusion	EX26	Have had contact with persons diagnosed with COVID-19 or who tested positive for SARS-CoV-2 by any diagnostic test within the 30 d prior to Visit 1.
8.0	Exclusion	EX27	Are soldiers, subjects in detention, CRO or sponsor staff or their family members.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
8.0	Exclusion	EX28	Regular receipt of inhaled/nebulized corticosteroids.
8.0	Exclusion	EX29_8	For older adults only: Have a condition known to put them at high risk for severe COVID-19, including those with any of the following risk factors: Hypertension, Diabetes mellitus, Chronic pulmonary disease, Asthma, Chronic liver disease ,Known Stage 3 or worse chronic kidney disease (glomerular filtration rate <60 mL/min/1.73 m2),Anticipating the need for immunosuppressive treatment within the next 6 months ,Resident in a long-term facility, Current vaping or smoking (occasional smoking is acceptable),History of chronic smoking within the prior year.
9.0	Inclusion	IN01_3	Have given informed consent by signing the informed consent form (ICF) before initiation of any trial-specific procedures.
9.0	Inclusion	IN02	They must be willing and able to comply with scheduled visits, treatment schedule, laboratory tests, lifestyle restrictions (e.g., to practice social distancing and to follow good practices to reduce their chances of being infected or spreading COVID-19), and other requirements of the trial.
9.0	Inclusion	IN03	They must be able to understand and follow trial-related instructions.
9.0	Inclusion	IN04_7	For younger subject cohorts, volunteers must be aged 18 to 55 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0. OR For older adult cohorts, volunteers must be aged 56 to 85 years, have a body mass index over 19 kg/m2 and under 30 kg/m2, and weigh at least 50 kg at Visit 0.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
9.0	Inclusion	IN05_9	They must be healthy, in the clinical judgment of the investigator, based on medical history, physical examination, 12-lead ECG, vital signs (systolic/diastolic blood pressure, pulse rate, body temperature, respiratory rate), and clinical laboratory tests (blood chemistry, hematology, and urine chemistry) at Visit 0. Note: Healthy volunteers with pre-existing stable disease, defined as disease not requiring significant change in therapy or hospitalization for worsening disease during the 6 wks before enrollment, can be included. OR For the immunocompromised cohort (Cohort 13); volunteers who have previously received solid organ transplant, or peripheral blood stem cell transplantation ≥6 months after transplantation, or individuals with HIV infection with a CD4+ T-cell count of ≥200 x 106 /L. Individuals with lower T-cell counts will be excluded from the trial on the basis that this represents a significant medical complication. In the clinical judgment of the investigator, volunteers must be immunocompromised but otherwise healthy. After consultation with the Medical Monitor, this may include individuals receiving immunosuppressant therapy due to another confounding disease at least 2 wks prior to enrollment and/or at least 6 wks following immunization with BNT162b2, and/or individuals with immunosuppressive treatment of an autoimmune disease if the disease is stable.
9.0	Inclusion	IN06	Women of childbearing potential (WOCBP) must have a negative beta-human chorionic gonadotropin urine test at Visit 0 and Visit 1. Women that are postmenopausal or permanently sterilized will be considered as not having reproductive potential.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
9.0	Inclusion	IN07_7	WOCBP must agree to practice a highly effective form of contraception during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization. WOCBP must agree to require their male partners to use condoms during sexual contact (unless male partners are sterilized or infertile).
9.0	Inclusion	IN08_3	WOCBP must confirm that they practiced at least one highly effective form of contraception for the 14 d prior to Visit 0.
9.0	Inclusion	IN09	WOCBP must agree not to donate eggs (ova, oocytes) for the purposes of assisted reproduction during trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
9.0	Inclusion	IN10	Men who are sexually active with a WOCBP and have not had a vasectomy must agree to practice a highly effective form of contraception with their female partner of childbearing potential during the trial, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
9.0	Inclusion	IN11	Men must be willing to refrain from sperm donation, starting after Visit 0 and continuously until 60 d after receiving the last immunization.
9.0	Inclusion	IN12	They must have confirmation of their health insurance coverage prior to Visit 0.
9.0	Inclusion	IN13	They must agree to not be vaccinated during the trial, starting after Visit 0 and continuously until 28 d after receiving the last immunization.
9.0	Exclusion	EX01	Have had any acute illness, as determined by the investigator, with or without fever, within 72 h prior to the first immunization. An acute illness which is nearly resolved with only minor residual symptoms remaining is allowable if, in the opinion of the investigator, the residual symptoms will not compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
9.0	Exclusion	EX02	Are breastfeeding on the day of Visit 0 or who plan to breastfeed during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
9.0	Exclusion	EX03	Have a known allergy, hypersensitivity, or intolerance to the planned IMP including any excipients of the IMP.
9.0	Exclusion	EX04	Had any medical condition or any major surgery (e.g., requiring general anesthesia) within the past 5 years which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
9.0	Exclusion	EX05	Have any surgery planned during the trial, starting after Visit 0 and continuously until at least 90 d after receiving the last immunization.
9.0	Exclusion	EX06_9	Had any chronic use (more than 21 continuous days) of any systemic medications, including immunosuppressants or other immune-modifying drugs (except for Cohort 13), within the 6 months prior to Visit 0 unless in the opinion of the investigator, the medication would not prevent, limit, or confound the protocolspecified assessments or could compromise subject safety. Note: Healthy volunteers with pre-existing stable disease, defined as disease not requiring significant change in therapy or hospitalization for worsening disease during the 6 wks before enrollment, can be included.
9.0	Exclusion	EX07	Received any vaccination within the 28 d prior to Visit 0.
9.0	Exclusion	EX08	Had administration of any immunoglobulins and/or any blood products within the 3 months prior to Visit 0.
9.0	Exclusion	EX09_4	Had administration of another investigational medicinal product including vaccines within 60 d or 5 half-lives (whichever is longer), prior to Visit 0.
9.0	Exclusion	EX10_9	Have a known history or a positive test for any of Hepatitis B, or Hepatitis C, or HIV 1 or 2 (except for Cohort 13) within the 30 d prior to Visit 0

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9.0	Exclusion	EX11_3	Have a positive PCR-based test for SARS-CoV-2 within the 30 d prior to Visit 1.
9.0	Exclusion	EX12	Have a positive drugs of abuse (for amphetamines, benzodiazepines, barbiturates, cocaine, cannabinoids, opiates, methadone, methamphetamines, phencyclidine, and tricyclic antidepressants) result at Visit 0 or Visit 1.
9.0	Exclusion	EX13	Have a positive breath alcohol test at Visit 0 or Visit 1.
9.0	Exclusion	EX14	Previously participated in an investigational trial involving lipid nanoparticles.
9.0	Exclusion	EX15_9	Are subject to exclusion periods from other investigational trials or simultaneous participation in another clinical trial. When entering the follow-up phase, i.e., after completing the EoT visit, subjects are allowed to participate in other clinical trials not investigating COVID-19 vaccines or treatments.
9.0	Exclusion	EX16	Have any affiliation with the trial site (e.g., are close relative of the investigator or dependent person, such as an employee or student of the trial site).
9.0	Exclusion	EX17	Have a history (within the past 5 years) of substance abuse or known medical, psychological, or social conditions which, in the opinion of the investigator, could compromise their well-being if they participate as trial subjects in the trial, or that could prevent, limit, or confound the protocol-specified assessments.
9.0	Exclusion	EX18	Have a history of hypersensitivity or serious reactions to previous vaccinations.
9.0	Exclusion	EX19	Have a history of Guillain-Barré Syndrome within 6 wks following a previous vaccination.
9.0	Exclusion	EX20	Have a history of narcolepsy.
9.0	Exclusion	EX21	Have history of alcohol abuse or drug addiction within 1 year before Visit 0.

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9.0	Exclusion	EX22_9	(Except for Cohort 13) Have a history of or suspected immunosuppressive condition, acquired or congenital, as determined by medical history and/or physical examination at Visit 0.
9.0	Exclusion	EX23	Have any abnormality or permanent body art (e.g., tattoo) that, in the opinion of the investigator, would obstruct the ability to observe local reactions at the injection site.
9.0	Exclusion	EX24	Have had any blood loss >450 mL, e.g., due to donation of blood or blood products or injury, within the 7 d prior to Visit 0 or plan to donate blood during the trial, starting after Visit 0 and continuously until at least 7 d after receiving the last immunization.
9.0	Exclusion	EX25	Symptoms of COVID-19, e.g., respiratory symptoms, fever, cough, shortness of breath and breathing difficulties.
9.0	Exclusion	EX26	Have had contact with persons diagnosed with COVID-19 or who tested positive for SARS-CoV-2 by any diagnostic test within the 30 d prior to Visit 1.
9.0	Exclusion	EX27	Are soldiers, subjects in detention, CRO or sponsor staff or their family members.
9.0	Exclusion	EX28	Regular receipt of inhaled/nebulized corticosteroids.

Protocol/ Amendment Version	Category	IETESTCD	Full Text of Criterion
9.0	Exclusion	EX29_9	For older volunteers and for Cohort 13 only: Have a condition known to put them at high risk for severe COVID-19, including those with any of the following risk factors: − Hypertension. − Diabetes mellitus. − Chronic obstructive pulmonary disease. − Asthma. − Chronic liver disease. − Known Stage 3 or worse chronic kidney disease (glomerular filtration rate <60 mL/min/1.73 m2). − Serious heart conditions, such as heart failure, coronary artery disease, or cardiomyopathies. − Sickle cell disease. − Cancer (except for Cohort 13). − Are immune compromised due to stem cell or organ-transplantation with significant medical complications such as acute or chronic graft rejection or graft versus host disease requiring intensive immunosuppressive treatment, transplant failure or infectious complications or other conditions that would be considered a contraindication for vaccination. − Are immune compromised due to HIV infection with a CD4+ count of < 200 x 106 /L at screening or significant medical complications such as opportunistic infections, malignant complications (e.g., lymphoma, Kaposi sarcoma), other organ manifestations consistent with advanced AIDS or other conditions that would be considered a contraindication for vaccination. − Resident in a long term facility. − Current vaping or smoking (occasional smoking is acceptable). − History of chronic smoking within the prior year.