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Date: 1 August 2025
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Summary Table of Study Protocol

Product: Romosozumab

Title	Real World Use, Effectiveness and Safety of Romosozumab among Osteoporosis Patients in Guangdong China		
Protocol version identifier	20250009, Version 1.0		
Date of last version of the protocol	Not applicable (NA)		
EU Post Authorization Study (PAS) Register No	NA		
Active Substance	NA		
Medicinal Product	Romosozumab		
Device	NA		
Product Reference	NA		
Procedure Number	NA		
Marketing authorization holder(s)	Amgen		
Joint PASS	No		
Research Question and Objectives	Among patients treated with Romosozumab in Guangdong China: Objectives: Describe characteristics of patients initiating Romosozumab and the use Describe change of available bone mineral density, and patient reported pain scores Characterize the safety profile of Romosozumab		
Country(ies) of Study	China		
Author	PPD		

Marketing Authorization Holder (MAH)

MAH(s)	Amgen Inc.
MAH Contact	One Amgen Center Drive
	Thousand Oaks, CA 91320 USA
	1-805-447-1000

This protocol was developed, reviewed, and approved in accordance with Amgen's standard operating procedures.

Protocol Version	Date of Protocol	Page Header Date
Original, Version 1.0	August 1, 2025	August 1, 2025

Date: 1 August 2025 Page 2 of 26

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Protocol Number: 20250009

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Investigator's Agreement

Product: Romosozumab

I have read the attached protocol entitled Real World Use, Effectiveness and Safety of Romosozumab among Osteoporosis Patients in Guangdong China, dated 1 August 2025, and agree to abide by all provisions set forth therein.

I agree to ensure that Financial Disclosure Statements will be completed by:

- me (including, if applicable, my spouse [or legal partner] and dependent children)
- my Sub investigators (including, if applicable, their spouses [or legal partners] and dependent children)

at the start of the study and for up to 1 year after the study is completed, if there are changes that affect my financial disclosure status.

I agree to ensure that the confidential information contained in this document will not be used for any purpose other than the evaluation or conduct of the clinical investigation without the prior written consent of Amgen Inc.

Signature

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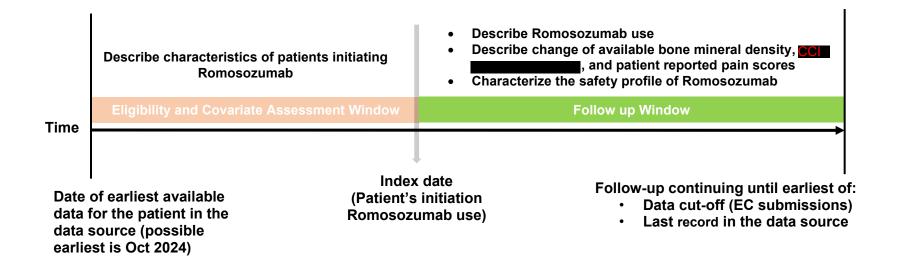
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Date (DD Month YYYY)

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Study Design Schema



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2. List of Abbreviations

AE	Adverse Events	
BMD	Bone Mineral Density	
CAP	Common Analytic Platform	
CCI		
CV	Cardiovascular	
EHR	Electronic Health Record	
EC	Ethic Committee	
HK	Hong Kong	
GBA	Greater Bay Area	
NRS	Numeric Rating Scale	
CCI		
VAS	Visual Analogue Scale	

3. Responsible Parties

Sponsor: Global Development, Amgen Inc

One Amgen Center Drive, Thousand Oaks, CA

4. Abstract

Study Title
 Real World Use, Effectiveness and Safety of Romosozumab among Osteoporosis
 Patients in Guangdong China

Study Background and Rationale

Despite the availability of osteoporosis treatments, osteoporosis continues to be a major public health concern in China. This is especially true given the aging population in China, which contributes to a higher risk of fractures, decreased quality of life, and an increased healthcare burden. Romosozumab has been approved in several countries based on the significant fracture risk reduction and BMD improvement observed in trials, when compared to placebo or alendronate. While Romosozumab is not yet available in China mainland, since October 2024 patients can access Romosozumab through China Greater Bay Area (GBA) special medical zone policy, which encompasses Guangdong Province, Hong Kong, and Macau. This pre-registration use policy is applicable to drugs/devices approved in HK or Macau but not yet authorized in China mainland. This study aims to describe the real-world use, effectiveness and safety of Romosozumab among Chinese



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patients treated with Romosozumab at China GBA special medical zone, focusing the Guangdong province.

Study Feasibility and Futility Considerations
Romosozumab will be continuously available before study data cut-off in China GBA.
The electronic health record (EHR) database in each hospital includes patient clinical history, demographic, treatments, diagnosis, lab, imaging, and also a pre-specified hospital department tracking form designed for Romosozumab. As part of the database, this form was used to record more granularity of patient characteristics at Romosozumab initiation, the treatment and outcomes at practice (e.g., BMD, pain score,

As of May 2025, Romosozumab is available in 7 hospitals located in Guangdong province. Eligible patients need to be physically at specific hospitals to receive treatments, enabling complete exposure assessment in the data source.

Objective(s)

Objectives	Endpoints	
Among patients treated with Romosozumab in Guangdong China:		
Describe characteristics of patients initiating Romosozumab and the use	 Demographic Clinical characteristics¹ Romosozumab use Dose and dosing schedule Total number of injections and duration 	
Describe change of available bone mineral density, [CC] , and patient reported pain scores	 Changes in BMD from baseline at the lumbar spine, total hip and femur neck at 6 and 12 months. CCI Changes in pain score at available time points. 	
Characterize the safety profile of Romosozumab	Number of recorded ² adverse events and serious adverse events since the first dose injection in the data source	

Note: ¹ Clinical characteristic at initiation include demographics (e.g., age, gender, height, weight), baseline lab and imaging (e.g. BMD, CCI section), serum calcium), prior osteoporosis treatment type and last dose date, history of recent fracture (hip, vertebral, or others, 1 year prior to initiation), history of fracture 2 and 3 years prior to initiation, other comorbidities and medication history.

²: Physicians tracked patients using a pre-specified hospital department tracking form designed for Romosozumab. This pre-specified tracking form was included in the ethnic committee submission of getting Evenity access to the specific hospital. Physicians are supposed to record the adverse events and serious adverse events during Romosozumab treatment in that form,

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according to hospital and government policy for special drug use. This database will have AEs and SAEs recorded in this form, but the relatedness is not available, and data is still accumulating.

Hypothesis(es)/Estimation
 Study objectives are descriptive in nature.

Study Design/Type

This is a retrospective cohort study of patients initiated Romosozumab at Guangdong China.

Study Population

The study population is patients initiated Romosozumab in Guangdong province hospitals where Romosozumab is available through special medical zone policy since October 2024.

• Summary of Patient Eligibility Criteria

All patients received at least 1 injection of Romosozumab in Guangdong province hospitals through China GBA special medical zone policy will be included, unless hospitals demonstrate operationally infeasible.

Follow-up

Index date per patient: Date of initial Romosozumab use at Guangdong province. Follow-up per patient will continue through the earliest date of:

- Data cut-off date (EC submissions)
- Last record in the data source

Physicians tracked patients using a pre-specified hospital department tracking form designed for Romosozumab, which is part of the EHR records in hospitals.

Variables

Outcome Variable(s)

Endpoints listed in objectives table.

Exposure Variable(s)
 Romosozumab use

Other Covariate(s)

All available health records available before/at Romosozumab initiation will be used for comorbidities, procedures and medications. And up to 90 days prior to initiation will be used for lab covariate assessment including BMD.

Data sources

The data source is the electronic health records in each participating hospital site in GBA Guangdong province. This includes a pre-specified hospital department tracking form designed for Romosozumab. An existing common analytic platform (CAP) of de-identified Romosozumab data will be used for analysis across hospitals.

Study Sample Size

By the data cut-off, approximately 300 patients treated in China GBA Guangdong province will be eligible to be included in this study.



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Data Analysis

Descriptive analysis will describe the number of Romosozumab patients by patient history, disease characteristics, and the duration of Romosozumab use.

The number of recorded safety events will be estimated during study follow-up. For BMD analysis, percentage change from baseline at 6 and 12 months will be calculated. A minimum dosage is required for BMD analysis, 5 doses for the 6-month analysis or 10 doses for the 12-month analysis.

Pain score will not be available in all study sites and change from baseline will be described at available timepoints. Pain score will also be analyzed according to whether patient had recent orthopedic surgery.

A stratified analysis of effectiveness outcomes will be conducted by types of osteoporosis medication used before Romosozumab initiation and by study sites.

Milestones

The planned final report of study results will be available in March 2027.

5. Amendments and Updates

None

6. Milestones

Milestone	Planned date
Start of data extraction	August 2025
End of data extraction	June 2026
Final report of study results	March 2027

7. Rationale and Background

7.1 Diseases and Therapeutic Area

Despite the availability of osteoporosis treatments in China, including anti-resorptive agents (e.g., bisphosphonates, denosumab) and anabolic agents (e.g., teriparatide), osteoporosis continues to be a major public health concern in China (Liu, Zhu and Wang 2024, Liu, Huang et al. 2025). This is especially true given the aging population in China, which contributes to a higher risk of fractures, decreased quality of life, and an increased healthcare burden. (Si, Winzenberg et al. 2015, Yu and Xia 2019, Xiao, Cui et al. 2022). Romosozumab is a monoclonal antibody that targets sclerostin and works through a dual mechanism: it promotes bone formation while also reducing bone resorption, making it a promising treatment option. It has been approved in several countries based on the rapid and substantial gains in bone mineral density (BMD), improved bone structure and strength, and significantly fracture risk reduction observed in trials, when compared to placebo or alendronate (Cosman, Crittenden et al. 2016, Saag, Petersen et



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al. 2017, OP0002 study CSR 2024). This is particularly important in patients who have already suffered a fracture or are otherwise at increased risk for having a fracture in the near future.

7.2 Rationale

Romosozumab is not yet available in China mainland but since October 2024, patients can access Romosozumab through China Greater Bay Area (GBA) special medical zone policy, which encompasses Guangdong Province, Hong Kong, and Macau. This preregistration use policy is applicable to drugs/devices approved in HK or Macau but not yet authorized in China mainland, thereby accelerating patient access to novel therapies. The Romosozumab label in Hong Kong, which was adopted in Guangdong province through special drug policy, is indicated in the treatment of severe osteoporosis in postmenopausal women at high risk of fracture. This study aims to describe the real-world use, effectiveness and safety of Romosozumab among Chinese patients treated with Romosozumab at China GBA special medical zone, with a focus in the Guangdong province.

7.3 Feasibility and Futility Considerations

Romosozumab became available in China GBA special medical zone since October 2024 through a pre-registration program and will continuously be available before data cut-off. The electronic health record database in each hospital site includes patient clinical history, demographic, treatments, diagnosis, lab, imaging, and also a prespecified hospital department tracking form designed for Romosozumab. As part of the database, this form was used to record more granularity of patient characteristics at Romosozumab initiation, the treatment and outcomes at practice.

Romosozumab is currently available in 7 hospitals located at Guangdong province and the number of hospitals with Romosozumab access at data cut-off will continuously increase. Eligible patients need to be physically at specific hospitals to receive treatments, enabling complete exposure assessment in electronic health record database. Besides, as Romosozumab is used through the pre-registration program, local government authorities require close monitoring. The pre-specified hospital department tracking form, contains detailed patient characteristics at Romosozumab initiation (e.g. CV history, baseline BMD and treatment), and follow-up evaluation of the treatment outcomes (e.g., BMD, pain score, CCI and adverse events). By the data cut-off, approximately 300 patients treated in Guangdong China will be eligible to be included in this study.



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7.4 Statistical Inference (Estimation or Hypothesis[es])

Study objectives are descriptive in nature. The multicenter, randomized, double-blind, placebo-controlled Phase III trial study conducted in China showed clinically relevant improvement in BMD at the lumbar spine from baseline to month 6 compared with placebo. Using an ANCOVA model, this amounted to a difference in least square mean (romosozumab – placebo) of 9.37 (95% CI: 8.34, 10.39; p<0.001).

8. Research Question and Objectives

8.1 Primary

Among patients treated with Romosozumab in Guangdong China Objectives:

- Describe characteristics of patients initiating Romosozumab and the use
- Describe changes of available bone mineral density, col
 , and patient reported pain scores.
- Characterize the safety profile of Romosozumab

9. Research Methods

9.1 Study Design

This is a retrospective cohort of patients initiating Romosozumab through China special medical zone policy at Guangdong Province.

9.2 Setting and Study Population

The study population is patients with osteoporosis that have received Romosozumab treatment in Guangdong province of China through special medical zone policy. By the time of data cut-off, approximately 300 Romosozumab treated patients will be included. Details of data sources are provided in Section 7.3.



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9.2.1 Study Period

Study period will be from patients' index date (Romosozumab initial use of the patient in China Guangdong province through special medical zone policy) till the end of follow up: the earliest of data cut-off (EC submissions) or last record in the data source

All available health records available before/at Romosozumab initiation will be used for comorbidities, procedures and medications. And up to 90 days prior to initiation will be used for labs covariate assessment including BMD.

9.2.2 Patient Eligibility

9.2.2.1 Inclusion Criteria

All patients received at least 1 injection of Romosozumab in Guangdong province hospitals through China GBA special medical zone policy will be included.

9.2.2.2 Exclusion Criteria

Not applicable

9.2.3 Matching

Not applicable

9.2.4 Baseline Period

The baseline period is defined as the period starting from date of earliest available data for the patients to the index date. All available health records available before/at Romosozumab initiation will be used for comorbidities, procedures and medications. And up to 90 days prior to initiation will be used for labs covariate assessment including BMD.

9.2.5 Study Follow-up

Follow up per patient will continue till the earliest date of :

- Data cut-off (EC submission date)
- Last record in the data source

9.3 Variables

9.3.1 Exposure Assessment

The exposure of interest is receipt of Romosozumab. Patients will be considered as exposed from the time of their initial date of Romosozumab administration through treatment discontinuation (last dose of Romosozumab observed in the database).

9.3.2 Outcome Assessment

Romosozumab use



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Treatment information of Romosozumab will be extracted through follow up including dose and dose schedule, as well as the total number of injections.

BMD Endpoint and CC

BMD data in grams / centimeter², both the value and report, and CCI

 Changes in BMD from baseline at the lumbar spine, total hip and femur neck at 6 and 12 months.



In the database, we will have both the measurement date and the label of this measurement (baseline, 1 month, 3 months etc.). If the label of this measurement is not available, then the following will be used. The baseline BMD will be defined as the BMD record closest to index date within 90 days before/at index date. The BMD at 6 months during Romosozumab treatment is defined as the BMD record within the period of index date + 180 days ± 90 days; the BMD at 12 months during Romosozumab treatment is defined as the BMD record within the period of index date + 365 days ± 90 days. If multiple records can be identified during each period, the BMD record at the date closest to the date of index date + 180 days, or index date + 365 days will be chosen, respectively.

A minimum dosage is required for BMD analysis, 5 doses for the 6-month analysis or 10 doses for the 12-month analysis.

Patient reported pain scores

 Changes in VAS pain score at available time points. Not all hospitals have pain scores assessments.

Safety outcomes

Number of recorded adverse events (AEs) and serious adverse events (SAEs). Physicians tracked patients using a pre-specified hospital department tracking form designed for Romosozumab. This pre-specified tracking form was included in the ethnic committee submission of getting Evenity access to the specific hospital. Physicians are supposed to record the adverse events and serious adverse events during Romosozumab treatment in that form, according to



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hospital and government policy for special drug use. This database will have AEs and SAEs recorded in this form, but the relatedness is not available, and data is still accumulating.

Covariate Assessment

The variables will be assessed during the baseline period. For variables that can change over time recorded at the index date or the value nearest to the index date will be utilized.

- Demographic (e.g. age, gender)
- Clinical characteristics
 - Height, weight, smoking status
 - Osteoporosis related (e.g. prior osteoporosis treatment type, last dose date and duration, prior glucocorticoid use, history of recent fracture (hip, vertebral, or others, 1 year prior to initiation), history of fracture 2 and 3 years prior to initiation)
 - Commordities
 - Concomitant treatments
 - Baseline lab and imaging (e.g. BMD, oci serum calcium)

9.3.3 Validity and Reliability

As stated in section 7.3, Romosozumab exposure is well captured as patients need to be physically at specific hospitals to receive treatments, enabling complete exposure assessment in CAP platform. In addition, as Romosozumab is used through the preregistration program, local government authorities require close safety monitoring. The pre-specified hospital department tracking form, contains detailed patient characteristics at Romosozumab initiation (e.g. CV history, baseline BMD and osteoporosis treatment), and follow-up evaluation of the treatment outcomes (e.g., BMD, pain score, CC), and adverse events).

Although hospitals are all using dual-energy X-ray absorptiometry (DXA) scan, there could be some heterogeneity of machine manufacturers and technologist performance. However, most patients go to the same hospital for follow up evaluation as it is a special drug, and therefore this heterogeneity should be minimized.



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9.4 **Data Sources**

Hospitals in Guangdong Province can apply for Romosozumab access through China GBA special drug policy and as of now, over 7 hospitals are prescribing Romosozumab at clinical practice since October 2024. The number of hospitals with access will increase by data cut-off.

The data source is the electronic health records in each participating hospital site in GBA Guangdong province. This includes a pre-specified hospital department tracking form designed for Romosozumab. An existing common analytic platform (CAP) of deidentified Romosozumab data will be used for analysis across hospitals.

The EHR database in each hospital includes patient clinical history, demographic, treatments, diagnosis, lab, imaging, and also a pre-specified hospital department tracking form designed for Romosozumab.

9.5 Study Size

By the data cut-off, approximately 300 patients treated in Guangdong China will be eligible to be included in this study.

9.6 **Data Management (Curation)**

In order to use the CAP database for research, analytical files must be built by data curation process to define the study cohorts and algorithms that are used to identify exposures, outcomes and covariates.

9.7 **Data Analysis**

The analyses of all objectives will be performed using descriptive statistical methods. No hypotheses testing is planned.

9.7.1 Planned Analyses

9.7.1.1 Interim Analysis/Analyses

Two interim analyses will be conducted with data cut-off around Q3 2025, and end of 2025.

9.7.1.2 **Primary Analysis**

The primary analyses will be conducted after completing data extractions of all eligible patients to describe real-world use, effectiveness and safety of Romosozumab.



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9.7.2 Planned Method of Analysis

9.7.2.1 General Considerations

All data analyses will be performed using appropriate software such as R or SAS. A statistical analysis plan with a detailed description of analyses to be performed will be developed.

9.7.2.2 Missing or Incomplete Data and Lost to Follow-up

In clinical practice, BMD measurement prior Romosozumab initiation may not be necessary for patients who experienced recent osteoporotic fracture (i.e. already meet high risk fracture treatment criteria), leading to potential missing baseline BMD. All BMD analysis will be conducted in patients with available baseline BMD. No imputation is planned for missing BMD.

9.7.2.3 Descriptive Analysis

9.7.2.3.1 Description of Study Enrollment

All patients meet the eligible criteria will be included.

9.7.2.3.2 Description of Patient Characteristics

Patient demographics and clinical history during the baseline period will be summarized. Categorical variables will be presented as number and percentage; continuous variables will be presented as number, mean with standard deviation, and median with interquartile range.

9.7.2.4 Analysis of the Primary Endpoint(s)

Descriptive analysis will describe the number of Romosozumab patients by patient history, disease characteristics, and the duration of Romosozumab use.

The number of recorded adverse events and serious adverse events will be estimated during study follow-up. For BMD analysis, percentage change from baseline at 6 and 12 months will be calculated.

Pain score will not be available in all study sites and change from baseline will be described at available timepoints.

9.7.2.4.1 Stratified Analysis

A stratified analysis of effectiveness outcomes will be conducted by prior osteoporosis treatment types.



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Pain score will also be analyzed according to whether the patient has had recent orthopedic surgery.

BMD change analysis will be conducted by study sites.

BMD change analysis will stratify by whether baseline BMD is below or above -3.0 if sufficient patients with baseline above -3.0.

9.7.2.4.2 Other Sensitivity Analysis

If available, reasons of Romosozumab discontinuation will be described. Baseline characteristics of Patients with or without available outcomes of interest will be described. For baseline characteristics of patients, a sensitivity analysis including recent covariates (within 12 months prior to index) will be conducted.

9.7.3 Analysis of Safety Endpoint(s)/Outcome(s)

All patients participating in the study who meet the eligibility criteria will be included in the safety analysis. Proactive reporting of the adverse events and serious adverse events of special drug/devices are required by the hospitals with access at drug initiation date, 3, 6, 12 and 18 months. Electrocardiograms, serum calcium and vital signs (e.g. blood pressure, heart rate, weight and height) were available at drug initiation date, 6, 12 and 18 months.

Number of adverse events and serious adverse events will be calculated. Physicians tracked patients using a pre-specified hospital department tracking form designed for Romosozumab. According to hospital and government policy for special drug use, physicians are supposed to record the adverse events and serious adverse events during Romosozumab treatment in that form. This study database (CAP) have AEs and SAEs recorded in this form but relatedness won't be available. The analysis will be conducted without additional coding.

9.8 Quality Control

Statistical analyses on the final analytical datasets will be conducted by two people and cross-checked for quality assurance.

9.9 Limitations of the Research Methods

9.9.1 Internal Validity of Study Design

9.9.1.1 Measurement Error(s)/Misclassification(s)

Patient's baseline and follow-up BMD may not be measured at the same hospital site or the same machine, leading to inaccurately assessment of BMD changes. However,



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since this is a special drug use, patients tend to go back to the same hospital for followup and BMD change by study sites will be performed.

9.9.1.2 Selection Bias

If demonstrated operationally infeasible, some hospitals in Guangdong province with Romosozumab access will not be included in this study (i.e. not all hospitals with access will be included). The data source may be biased towards hospitals with research interest contributing to CAP platform and with supporting infrastructure.

9.9.1.3 Confounding

In clinical practice, most Romosozumab initiators are with prior osteoporosis treatments. A stratified analysis will be conducted by the type and duration of prior osteoporosis treatments.

9.9.2 External Validity of Study Design

All patients received at least 1 injection of Romosozumab in Guangdong province hospitals through China GBA special medical zone policy will be included, unless hospital demonstrated operationally unfeasible. Since Romosozumab is not available in mainland China outside of GBA area, the early adopters included in this study may not be fully representative of the broader population that may eventually receive this treatment. For instance, the high cost and the need for patients to travel to hospitals with Romosozumab access in Guandong province may mean they generally have a higher socioeconomic status than the average patient.

9.9.3 Limitations Due to Missing Data and/or Incomplete Data

In clinical practice, BMD measurement prior Romosozumab initiation may not be necessary for patients experienced recent osteoporotic fracture (i.e. at high risk of fracture) leading to potential missing baseline BMD. All BMD analysis will be conducted in patients with available baseline BMD.

10. Protection of Human Participants

10.1 Informed Consent

Informed consent will not be applicable for a study containing only de-identified secondary data.

10.2 Institutional Review Board/Independent Ethics Committee (IRB/IEC)

This study protocol will be reviewed by the IEC of hospitals included in the CAP platform.



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10.3 Patient Confidentiality

The investigator must ensure that the participant's confidentiality is maintained for documents submitted to Amgen.

Participant will be assigned a unique identifier by the sponsor. Any participant records or datasets that are transferred to the sponsor will contain the identifier only; participant names or any information which would make the participant identifiable will not be transferred.

For Serious Adverse Events (SAEs) reported to Amgen, participants are to be identified by their unique participant identification number, initials (for faxed/emailed reports, in accordance with local laws and regulations), and age (in accordance with local laws and regulations).

Documents that are not submitted to Amgen (eg, signed informed consent forms) are to be kept in confidence by the investigator, except as described below.

In compliance with [governmental regulations/ICH GCP Guidelines], it is required that the investigator and institution permit authorized representatives of the company, of the regulatory agency(s), and the [IRB/IEC] direct access to review the participant's original medical records for verification of data. Direct access includes examining, analysing, verifying, and reproducing any records and reports that are important to the evaluation of the study. The investigator is obligated to inform and obtain the consent of the participant to permit such individuals to have access to their study-related records, including personal information.

11. Collection, Recording, and Reporting of Safety Information and Product Complaints (PCs)

11.1 Safety Collection, Recording and Submission to Amgen Requirements

This study is analyzing secondary data from electronic health records in the participating hospitals. The safety outcomes that are listed in section Outcome Assessment 9.3.2 will be documented and analyzed in this study. These will be reported in aggregate in the final study report as *number of events*. See section Outcome Assessment 9.3.2 for safety outcomes and definitions.



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12. Administrative and Legal Obligations

12.1 Protocol Amendments and Study Termination

Amgen may amend the protocol at any time. When Amgen amends the protocol and distributes the protocol amendment to the sites, written agreement from the Investigator must be obtained where applicable per local governing law and/or regulations. The IRB/IEC must be informed of all amendments provided to the investigator by Amgen and give approval for all protocol amendments that Amgen provides to the site. The Investigator **must** send a copy of the approval letter from the IRB/IEC to Amgen.

Amgen reserves the right to terminate the study at any time. Both Amgen and the Investigator reserve the right to terminate the Investigator's participation in the study according to the contractual agreement. The Investigator is to notify the *IRB/IEC* in writing of the study's completion or early termination and send a copy of the notification to Amgen.

13. Plans for Disseminating and Communicating Study Results

13.1 Publication Policy

The study will be published.

Authorship of any publications resulting from this study will be determined on the basis of the International Committee of Medical Journal Editors (ICMJE) Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals, which states authors need to fulfil all of the following criteria (defined in SOP-429662):

- 1. Make substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work.
- 2. Draft the work or review it critically for important intellectual content.
- 3. Approve of the version to be submitted for publication.
- 4. Agree to be accountable for all aspects of the work by ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

All publications (eg, manuscripts, abstracts, oral/slide presentations, book chapters) based on this study must be submitted to Amgen for corporate review. The vendor agreement will detail the procedures for, and timing of, Amgen's review of publications.



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14. References

Clinical Study report OP0002, A multicenter, randomized, double-blind, placebocontrolled study to evaluate the efficacy, safety, and tolerability of romosozumab treatment in postmenopausal Chinese women with osteoporosis.

Cosman, F., D. B. Crittenden, J. D. Adachi, N. Binkley, E. Czerwinski, S. Ferrari, L. C. Hofbauer, E. Lau, E. M. Lewiecki, A. Miyauchi, C. A. Zerbini, C. E. Milmont, L. Chen, J. Maddox, P. D. Meisner, C. Libanati and A. Grauer (2016). "Romosozumab Treatment in Postmenopausal Women with Osteoporosis." N Engl J Med 375(16): 1532-1543. Liu, X., Z. Zhu and X. Wang (2024). "Analysis of medication treatment for women with osteoporosis: A real-world retrospective study from Chinese tertiary grade A hospital." Bone Rep 21: 101778.

Liu, Y., X. Huang, K. Tang, J. Wu, J. Zhou, H. Bai, L. Zhou, S. Shan, Z. Luo, J. Cao, P. Song and I. Rudan (2025). "Prevalence of osteoporosis and associated factors among Chinese adults: a systematic review and modelling study." <u>Journal of Global Health</u> **15**. Saag, K. G., J. Petersen, M. L. Brandi, A. C. Karaplis, M. Lorentzon, T. Thomas, J. Maddox, M. Fan, P. D. Meisner and A. Grauer (2017). "Romosozumab or alendronate for fracture prevention in women with osteoporosis." <u>New England Journal of Medicine</u> **377**(15): 1417-1427.

Si, L., T. Winzenberg, Q. Jiang, M. Chen and A. Palmer (2015). "Projection of osteoporosis-related fractures and costs in China: 2010–2050." <u>Osteoporosis International</u> **26**: 1929-1937.

Xiao, P.-L., A.-Y. Cui, C.-J. Hsu, R. Peng, N. Jiang, X.-H. Xu, Y.-G. Ma, D. Liu and H.-D. Lu (2022). "Global, regional prevalence, and risk factors of osteoporosis according to the World Health Organization diagnostic criteria: a systematic review and meta-analysis." Osteoporosis International 33(10): 2137-2153.

Yu, F. and W. Xia (2019). "The epidemiology of osteoporosis, associated fragility fractures, and management gap in China." <u>Arch Osteoporos</u> **14**(1): 32.



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15. Appendices



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Appendix A. List of Stand-alone Documents

None



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Appendix B. ENCePP Checklist for Study Protocols

<<A copy of the European Network of Centres for Pharmacoepidemiology and Pharmacovigilance (ENCePP) Checklist for study protocols is available at the following location: https://encepp.europa.eu/encepp-toolkit/encepp-checklist-study-protocols_en. It is to be completed and signed by the main author, as listed on the title page of the study protocol, and should be included in Appendix B. The checklist will facilitate the review of the protocol and evaluation of whether investigators have considered important methodological aspects.>>

<< In question 9.5 of the Checklist Revision 1:

- "Study start" means "Start of data collection"
- "Study progress" means "Progress Report(s)"
- "Study completion" means "End of data collection"
- "Reporting" means "final report of the study results">>>





Approval Signatures

Document Name: Protocol Original romosozumab 20250009

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