



COVID-19 Vaccination Information

Novel Coronavirus Response and Coordination Centre

Types of COVID-19 vaccines available in Macao



1 Inactivated vaccines



Manufacturer

- Sinopharm China National Biotec Group (Beijing)

Development and production technology

- The novel coronavirus is grown in large quantities in its natural state in the laboratory and then submitted to the inactivation process using heat or a chemical before being purified into a vaccine.

Principle of action

- After vaccination, the vaccine will trigger an immune response to produce antibodies against the viral spike protein and other antigenic components.
- When the recipient is exposed to the real virus, the immune system will be able to recognise it and react quickly, preventing the disease from developing or reducing it to mild symptoms.

Characteristics

- This production technology has been in use for decades and applied to influenza vaccines and several widely-used vaccines.

Prevention efficacy*

- Around 80%

Safety

- Low incidence rate of systemic side effects like fever.
- Incidence rate of severe allergic reactions is standard.
- No current major safety issue.
- In use in various countries since September 2020.

Applicable ages

- Tentatively set as ≥ 3 years of age
- To be adjusted under future new data

*Interim results of clinical trials

Types of COVID-19 vaccines available in Macao



2 mRNA vaccines



Manufacturer

- BioNTech in collaboration with Fosun Pharma

Development and production technology

- This vaccine uses a genetic material called mRNA to express the coronavirus spike protein and replicate it by human cells.

Principle of action

- After vaccination, the mRNA enters muscle cells and gives instructions to other cells to produce coronavirus spike proteins, thus triggering the immune system to make antibodies against the specific protein.
- When the recipient is exposed to the real virus after vaccination, the immune system will respond to the viral spike protein to not enter the cells for replication and thus prevent the disease from developing or reducing it to mild symptoms.

Characteristics

- This technology has been applied to the production of immuno-oncology drugs in the past.
- Must be transported and stored in a deep-freeze cold chain, so extensive use is only expected to occur in countries that can guarantee these conditions. Production does not involve virus culturing, can be mass-produced in a short period.

Prevention efficacy*

- Over 90%

Safety

- Moderate incidence rate of systemic side effects like fever.
- Incidence rate of severe allergic reactions is slightly higher.
- Currently being the most common type of vaccine used worldwide in adults over 60 years of age, especially those over 80 years old.
- The incidence rate of facial paralysis following immunization is not significantly higher than that in other population groups; monitoring is ongoing.
- In use in multiple countries since December 2020.

Applicable ages

- Tentatively set as ≥ 12 years of age
- To be adjusted under future new data

*Interim results of clinical trials

How are COVID-19 vaccines developed?

Each vaccine under development must first undergo **animal testing** and **3 phases of a clinical trial** before it can be distributed for widespread use:

1 Animal testing

Tests on dosage, safety, and efficacy are carried out using genetically similar animals to human beings, such as rhesus monkeys. A challenge test is conducted in the experimental animals by exposing them to an aerosol containing the virus. The vaccine group is then compared to the control group in terms of infection and disease incidence. Human trials will only begin after testing in animals has proved to be safe and effective.

2 Clinical trials

Trials are performed on volunteers.

Phase I: The vaccine is given to dozens, or even hundreds, of volunteers to see whether they would produce antibodies or develop immediate and obvious side effects after vaccination; if the vaccine's safety and ability to generate an immune response are preliminarily assured, it will move on to phase II clinical trial.

Phase II: The vaccine is then given to thousands of volunteers to identify the recommended dosage and vaccination interval, besides further assessing its safety and ability to generate an immune response.

Phase III: Tens of thousands of volunteers are recruited from areas with a high incidence rate, who are randomly assigned to either the vaccine group or the control group. The vaccine group is then compared to the control group, who receive only placebo, to determine if their disease incidence rate is much reduced compared to the control group and further study the vaccine's safety.

“Double-blind” clinical trials: To ensure the clinical trial results are not influenced by subjective factors from researchers and volunteers, the volunteers and the research team conducting the study are shielded from knowing which volunteers had received the vaccine being tested or the placebo. Only after a particular stage is reached that the volunteers and the trial scientists are informed who belonged to the vaccine group and who the control group. Finally, after statistical analysis, the effectiveness of the vaccine is concluded.

After the trials are concluded and data collected, the full report is submitted to the local drug regulators, who will review the data to confirm the vaccine's safety and effectiveness before approving its mass distribution.

How do we view the safety of COVID-19 vaccines?

- It's reasonable to expect concerns about their safety, considering the short period between the vaccine's development and the widespread introduction of the COVID-19 vaccine.
- No vaccine is 100% free from potential adverse reactions. Safety is relative. One should consider whether the benefits outweigh the potential risks.
- In 2020, more than 200 candidate vaccines were being developed worldwide, but only a few were qualified to enter phase III clinical trial, and of these, only a portion was approved for use.
- Due to the imperative for speed, unprecedented resources have been dedicated to the research and development process across countries and organisations. Clinical trials of different phases have been carried out simultaneously by other vaccine developers worldwide; the number of projects and volunteers is also unprecedented.
- Millions worldwide have widely used the COVID-19 vaccines being introduced into Macao with close adverse event monitoring in place.

Rigorous research and development process:

- Pre-clinical animal testing and three stages of clinical trials are required to assess the vaccine's efficacy and observe possible side effects and their incidence rates.
- If a severe and unpredictable adverse reaction occurs, the entire trial will be suspended at once. The suspended trial can only resume after being verified that the adverse reaction is not associated with the vaccine.
- Only vaccines that have passed three phases of clinical trials with positive outcomes on their safety and efficacy are qualified to apply for large-scale use and marketing approval.
- While the vaccine is in large-scale use, post-vaccination monitoring is conducted by health authorities worldwide to evaluate the vaccine's safety and efficacy permanently. This method ensures that the benefits of vaccination significantly outweigh the risks.

Continuous surveillance and management mechanism in place by the Health Bureau:

- The Macao Health Bureau has a stringent tool for the surveillance and notification of adverse events following immunisation. Continuous surveillance can help detect adverse reactions that have never occurred during clinical trials.
- People should be aware that the vaccine does not necessarily cause adverse events following immunisation. Fever, for example, can be attributed to vaccination or influenza infection. Establishing the relationship between the adverse reactions and the vaccine requires careful investigation and analysis. Once confirmed that the vaccine causes the adverse reaction, immediate measures will be taken, e.g. suspending the vaccine administration.
- During the transportation and storage of vaccines, the temperature requirements must be strictly complied with; when administering the vaccines, health professionals must observe a set of stringent guidelines.

Common side effects and adverse reactions of COVID-19 vaccines

- The vaccine, like any other medicines, can have side effects and adverse reactions.
- Currently, several COVID-19 vaccines have initiated phase III clinical trial. Some have already passed three phases of clinical trial and are authorised for emergency use or large-scale use in some countries. According to the available data, typical side effects of COVID-19 vaccines include injection site pain, fatigue, headache, muscle pain, joint pain, chills or fever; the side effects are usually mild or moderate and go away on their own in a few days.
- Regarding a previous report that the clinical trial of a COVID-19 vaccine was suspended over a severe adverse reaction of a volunteer after receiving the vaccine, a probe was initiated and found no link between the adverse reaction and the vaccine. The relevant trial has been resumed already.
- Severe allergic reactions occur in approximately 1/100,000 people who have been vaccinated with mRNA vaccine, whereas the incidence rates of severe allergic reactions in other COVID-19 vaccines are similar to those of other regular vaccines (i.e. approximately 1/1,000,000 people); therefore, before administration of the vaccine, health professionals will clinically assess the vaccine recipients. After vaccination, all vaccinees will be given instructions to rest at the vaccination point for at least 30 minutes to inform the health professionals on-site and receive help immediately if they experience any discomfort.
- Regarding whether there are any other side effects, such as long-term side effects, that haven't been identified in the clinical trials, the Macao Health Bureau will make a continuous assessment and follow-up efforts by monitoring the local and international situation on post-vaccination adverse events.



Common side effects and adverse reactions of COVID-19 vaccines

	Inactivated vaccines (Sinopharm CNBG, Beijing) ¹	mRNA vaccines (BioNTech) ²
Very common (>10%)	Injection site pain, headache.	Injection site pain and swelling, fatigue, chills, fever, headache, joint pain, muscle pain, diarrhoea.
Common (1-10%)	Fever, fatigue, muscle pain, joint pain, nausea.	Injection site redness, nausea, vomiting.
Uncommon (>0.1-1%)	Itching at injection site and non-injection site, skin rash, loss of appetite, vomiting.	Insomnia, weakness, extremity pain, lymphadenopathy, injection site itching.
Rare (>0.01-0.1%)	Acute allergic reaction (other than anaphylaxis), skin rash at non-injection site, lymphadenopathy	Acute peripheral facial paralysis (Bell's palsy) ³ .
Very rare (<0.01%)	--	Hypersensitivity reactions (other than anaphylaxis), anaphylaxis, extensive swelling at injection site, myocarditis, pericarditis ⁴ .

Note:

- 1) 1) Adapted from the outcomes of phase III clinical trial in the manual approved by the National Medical Products Administration of China on 30 December 2020.
- 2) 2) Adapted from the manual approved by the European Medicines Agency, and updated in accordance with the safety report of the manufacturer in January 2021.
- 3) 3) Incidence rate of facial paralysis following receipt of mRNA vaccine (BioNTech) is not significantly higher than that in the general population; monitoring is ongoing.
- 4) 4) Adapted from the information of the European Medicines Agency dated 9 July 2021.

Benefits of getting a COVID-19 vaccine

- Two doses of COVID-19 vaccines will be given four weeks apart in general; two weeks after administering two shots, most of the vaccine recipients can produce immunity against COVID-19. Getting vaccinated may reduce risks of infections, morbidity, serious complications or even death, and at the same time, protect, to a certain extent, people around the vaccine recipient, particularly the high-risk population (e.g. the elderly).
- Presently, it is still uncertain how long immunity to COVID-19 lasts and whether there will be a need for a booster dose. It is understood that immunity can last at least six months.

Contraindications of COVID-19 vaccines

Contraindications vary by product, and the following are general contraindications:

- 1 Individuals allergic to the vaccine or any of its ingredients;
- 2 Individuals suffering from acute diseases;
- 3 People with chronic conditions who are in an acute episode;
- 4 Individuals who have a fever;
- 5 Pregnant women.

*Among the above, individuals allergic to the vaccine or any of its ingredients are absolutely contraindicated to the vaccine, while others are relatively contraindicated. Health professionals will clinically assess the situation for vaccination of each interested person.

Matters of attention

Before vaccination:

- Fully understand the essential notes of the COVID-19 vaccine and the vaccination procedures.
- Consult health professionals if there are any questions, especially if you have allergic reactions to other medicines or food.

At the moment of vaccination:

- At the present moment, get another vaccine at the same time it's no advisable.

After vaccination:

- Take rest at the vaccination point for at least 30 minutes. Should there be any discomfort, in particular acute allergic symptoms such as skin rash, itchy skin, swollen lips and mouth and difficulty breathing, inform the health professionals immediately for help.
- Get more rest and drink more water.
- Should there be any severe discomfort, in particular, suspected allergic or other severe adverse reactions, seek medical advice promptly.

Eligibility

- Within the suitable age groups of each vaccine
- Without contraindications

Vaccination plan

Phase 1: Priority groups (booking and vaccination has commenced)

Category I Frontline workers in anti-epidemic effort

Health personnel and supporting workers in medical, clinical, inspection or examination departments, workers at boundary control points, frontline anti-epidemic workers in government departments (firefighter, police officers and customs officers);

Category II Groups with a high risk of occupational exposure

Employees from the cold-chain and fresh food sectors, people in contact with cold-chain products, users and workers at residential care facilities, teaching and administrative staff of educational institutions, employees from external traffic, public transport, air transport and cross-boundary traffic sectors, employees from tourism, gaming and entertainment industries, workers of public security forces;

Category III Individuals intending to visit countries or areas with epidemic conditions

Phase 2: Macao residents (Now open for booking)

Phase 3: Non-resident worker ID holders and other non-residents with authorisation to stay in Macao (Now open for booking)

Method to schedule an appointment

- 1** Scan QR code or visit the website to enter the Health Bureau's COVID-19 Vaccination Appointment System



<https://eservice.ssm.gov.mo/covidvacbook>

- 2** For people who have difficulties in scheduling an appointment online, assistance will be provided by the Social Welfare Bureau at the following 8 locations:

- Social Welfare Bureau Headquarters
- Central and Southern District (Patane) Social Service Centre
- Northern District (Tamagnini Barbosa) Social Service Centre
- Northwest District (Ilha Verde) Social Service Centre
- Taipa and Coloane Social Service Centre
- Taipa and Coloane Social Service Centre (Taipa Branch)
- Comprehensive Assessment Centre for Rehabilitation Service
- Healthy Life Education Centre

Locations of vaccination

The vaccination points across the territory and their service hours are as follows:

Location	Time	
Conde de São Januário General Hospital	24-hr Outpatient Clinic	Monday to Sunday, including public holidays 09:00-16:30
	Blood Specimen Collection Room	Monday to Sunday, including public holidays 13:30-20:30
8 Health Centres and 2 Health Stations subordinated to the Health Bureau	1. Hac Sa Wan (Areia Preta) Health Centre	Monday to Friday 8:30-12:30 14:30-19:30 Saturday 14:00-18:30 (Closed on Sundays and public holidays)
	2. Fai Chi Kei Health Centre	
	3. Ilha Verde Health Centre	
	4. Tap Seac Health Centre	
	5. Hoi Pong (Porto Interior) Health Centre	
	6. Praia do Manduco Health Centre	
	7. Ocean Gardens Health Centre	
	8. Nossa Senhora do Carmo - Lago Health Centre	
	9. Seac Pai Van (Coloane) Temporary Health Station	
	10. Coloane Health Station	
Large-sized community vaccination station at Macao Forum	Macao Forum	Monday to Sunday, including public holidays 09:00-20:30
Large-sized community vaccination station at Mong-Ha Sports Centre	Mong-Ha Sports Centre, Rua Francisco Xavier Pereira, Macao	Monday to Sunday, including public holidays 10:00-19:00
Kiang Wu Hospital	COVID-19 Vaccination Station (1/F of Emergency and Inpatient Building)	Monday to Saturday 08:30 to 19:30 (Closed on Sundays and public holidays)
University Hospital	6/F, Block H, Macau University of Science and Technology, Avenida Wai Long, Taipa	Monday to Saturday 09:00 to 18:00 (Closed on Sundays and public holidays)
Workers' Medical Clinics	1. Medeiros (Rua do Bispo Medeiros, No. 7B, R/C)	Monday to Friday 09:00-12:00 15:00-19:00 (Closed on Saturdays, Sundays and public holidays)
	2. Toi San (Istmo de Ferreira do Amaral, Tamagnini Barbosa (Bloco A), R/C)	

Nota: COVID-19 vaccination is available at Conde de S. Januário General Hospital, various health centres and health stations under the Health Bureau. Besides, the large-sized community vaccination stations of the Health Bureau at Macao Forum and Mong-Ha Sports Centre, as well as a number of partner entities including Kiang Wu Hospital, the University Hospital and the Workers' Medical Clinics, also offer inactivated jabs (Sinopharm CNBG Beijing) to individuals who are eligible for free inoculation.

Documents to be presented for vaccination

- 1 Valid identity document; non-residents should present identification document indicating eligibility for vaccination, such as non-resident worker ID, special stay permit and special authorisation to stay;
- 2 SMS / QR Code screen capture of successful appointment;
- 3 Supporting document(s) indicating priority for vaccination, such as working pass or overseas student ID;
- 4 Individuals under 18 years of age should either be accompanied by their parent/legal guardian or present informed consent signed by their parent/legal guardian;
- 5 Individuals who have previously received the COVID-19 vaccine elsewhere should show the relevant vaccination record's original document.

Schedule of charges for COVID-19 vaccination

Category of person	Fee
Macao residents	No charge
Non-local residents <ul style="list-style-type: none"> ■ Non-resident worker ID holders ■ Non-local students with authorisation to stay in Macao ■ Persons in custody 	No charge
Apart from the above categories, other non-residents with authorisation to stay in Macao	250 patacas per jab

Remark: Individuals entering Macao for a visit (leisure, social or business) are not eligible to receive the vaccination at a fee.

For more vaccination information



please scan QR code or visit website

<https://www.ssm.gov.mo/apps1/covid19/vaccine/ch.aspx>

Hotline 28 700 800