



Hong Kong General Chamber of Commerce  
香港總商會 1861



# Hong Kong General Chamber of Commerce – BRI Working Group

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*April 2022*

# Chinese mRNA Vaccines – International Partnerships

*BNT 16262 (Comirnaty)\**

*BioNTech Pfizer (US)*

Date	Company	Country	Key Points	Other Specifics
03/20	BioNTech	Germany	JV with Fosun Pharma (\$135 million) exclusive Chinese licensing	Start Clinical Trials
12/20	BioNTech	Germany	Agreed to supply 100 million doses	To mainland China
01/21	BioNTech	Germany	Special authorisation Hong Kong	Begin use in Hong Kong
02/21	BioNTech	Germany	Special authorisation Macau	Released 105,000 doses
5/21	BioNTech	Germany	Formed New China production 50/50 JV up to 1 billion doses/yr	Used as booster
07/21	BioNTech	Germany	Taiwan requests 15 million doses	JV releases 1 <sup>st</sup> batch 09/21

As of today's date, local Chinese production still awaiting regulatory approval

\* Gained full USA approval for use in cases (16<sup>th</sup> August 2021).

Doses administered by Region (2021-Q1 2022) (m)

> Hong Kong	7.9
> Taiwan	15.7
> Macau	0.3
	<u>23.9</u>

# Chinese mRNA Vaccines – International Partnerships

*PTX – COVID-19-B*

*Everest Medicines / Providence Therapeutics*

Calgary based Providence initially developed mRNA for oncological treatments. Currently has three potential COVID-19 doses now: one advanced, two pre-clinical. In June 2021, signed a deal to produce 600 million mRNA COVID doses in India in 2022, increasing to 1 billion over time.

Date	Company	Country	Key Points	Other Specifics
09/21	Providence Therapeutics	Canada	Everest Medicines (HK) signed two separate definitive agreements	Key is technology transfer
09/21	Providence Therapeutics	Canada	Licensing agreement existing mRNA Vaccine for (up to \$150 million)	For use within Emerging Asian countries (listed below)
09/21	Providence Therapeutics	Canada	Launched 50/50 global collaboration (up to \$350 million)	Develop new therapeutics / vaccines
12/21	Providence Therapeutics	Canada	Vaccine added by WHO	Solidarity Trial Vaccines Clinical Trials

Greater China, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Pakistan, Philippines, Singapore, Thailand, Timor-Leste and Vietnam

# Chinese mRNA Vaccines – Developed within China

*ARCoV*

*Academy of Military Medical Sciences, Suzhou Abogen  
Biosciences and UltraTRAX Biotechnology*

Date	Company	Country	Key Points	Other Specifics
01/22	Abogen Walvax	China	Phase 1 Clinical Trials published	86% but with more side effects
02/22	Honeywell	China / USA	Collaborates on China's 1 <sup>st</sup> mRNA plant	Digitised / intelligent
02/22	CEPI	Switzerland	Made additional \$8.2 million investment	To fund Phase I, II trials in Mali
03/22	Abogen Walvax	China	Phase 3 clinical trials	Monitoring cohort group
04/22	Abogen Walvax	Mexico / Indonesia	Phase 3 clinical trials	Currently enrolling

*CanSinoBIO*

10/21	Aerogen (Convdecia)	Ireland	Use of Aerogen Solo vibrating mesh nebuliser for delivery	Convdecia demonstrate 95.5% efficiency in Phase 3 trials
01/22	Lancet	UK	Study shows one dose (Convdecia) inhaler is safe	Useful as booster
04/22	CanSinoBIO (CDE/NMPA)	China	Approval to start Phase 1 trial	High level antibodies, including Omicom

# Chinese mRNA Vaccines – Developed within China

## *AIM Vaccine Group (Rongan Biological)*

Date	Company	Country	Key Points	Other Specifics
07/20	AIM	China	Broke ground on new COVID-19 vaccine plant near Ningbo	05/20 – previously raised pre-IPO financing by Puhua and Everest VC
09/21	AIM	China	Submitted an IPO application to HKEX	In 2020, issued 60 million doses (2 <sup>nd</sup> largest after CNBG)
30/22	AIM	China	Entering Phase 2 trials	No results until Q4
03/22	AIM	China	Began testing overseas	Phase 3 trials

## *Stemirna Therapeutics*

07/21	Stemirna	China	Raised \$188 million to fund development	Led by Sequoia Capital, WuXi AppTec and OrbiMed
12/21	Stemirna	China	Launched Phase I/II trials	For its 2 <sup>nd</sup> gen mRNA candidates
02/22	Stemirna	China	Chinese current capacity	400 million doses/yr
02/22	Stemirna	China	Testing in Laos and Brazil	Planning more ASEAN/LAC trials

“Effective against Delta and Omicron variants and... comparable or even superior to the other vaccines developed by Pfizer, Moderna, Abogen

# BRI Vaccine Partnership Initiative

## Chinese Vaccines International Production – BRI Selected Countries Initial List Launched

Country	Population (m)	Partners	COVID Vaccine Doses		Other Vaccines
			2022 (m)	2023+ (m)	
Indonesia	276	Bio-Farma-Sinovac / PTEtana-Walvax	250	320	Additional vaccines <sup>(1)</sup>
Pakistan	220	Searle Livzon (PakVac) AJM Pharma – CanSino Bio	176	200	Traditional Chinese Medicine <sup>(2)</sup>
Russia	146	Petrovax Pharma – CanSino Bio	120	160	Various vaccines and medicines <sup>(3)</sup>
Myanmar	55	Myancopharm-Sinopharm	8	12	1 million/mo <sup>(4)</sup>
Uzbekistan	34	Jurabek Labs – Zhifei Longcom Biopharma	100	ND	Largest manufacturer of pharma products <sup>(5)</sup>
Malaysia	33	Pharmaniaga-Sinovac / Solution Group – CanSino Bio	12	ND	Inhaler <sup>(6)</sup>
Chile	19	Sinovac	TBD	50	Coronavirus, hepatitis, flu, chicken pox, polo <sup>(7)</sup>
UAE	10	Julphar (Group 42) – Sinopharm (Hayat-Vax)	200	200	Approved protein booster <sup>(8)</sup>
Singapore	5	Innova (Singapore) Pasaca (US) – Sinopharm	TBD	TBD	All Sinopharm vaccines globally <sup>(9)</sup>

(1) Deal signed 08/20; to include all facets of CoronaVac. ASEAN regional play. Walvax 70m+ doses.

(2) Initially launched 06/21 (single dose) Estimates savings \$250 million.

(3) Partners is full service International pharma company.

(4) Launched local production 03/22. Sinopharm's 1<sup>st</sup> plant in Asia-Pacific.

(5) Launched September 2021, only 12 million in 2021. Projections in 2022 much higher than 2021.

(6) Delivered 12 million fill and finish 2021 (Sinovac), Solution Group CanSino Bio launching 2022. Also approved booster.

(7) In 12/21, Sinovac acquired an existing plant near Santiago. Invest up to \$100 million.

(8) Operated by plan in Ras Al Khaimah and Kizad expected to transfer to Haya Biotech (Abi Dhabi-Sez). 2<sup>nd</sup> gen vaccines released 09/21. Protein booster approved 12/21.

(9) Formed a JV Sino-Innovax; 49% Innova Bio-Medical (Pasaca Capital), 57% Sinopharm.

# BRI Vaccine Partnership Initiative

## *Chinese Vaccines International Production – BRI Countries Not Yet Launched*

Country	Population (m)	Partners	COVID Vaccine Doses		Other Vaccines
			2022 (m)	2023+ (m)	
Brazil	215	Butantan Institute – CoronaVac	100	120	Rabies, Zika, Hep A, B <sup>(1)</sup>
Bangladesh	168	Incepta-Sinopharm	60	60+	Still negotiating terms (02/22) <sup>(2)</sup>
South Africa	60	Numolux Group / AfriVac Sinovac	TBD	TBD	Other vaccines <sup>(3)</sup>
Argentina	46	Sinopharm / Beijing Institute Biological products	–	52	TBD <sup>(4)</sup>
Cambodia	16	Partner/Location not disclosed – Sinopharm	14	60	Strong doses of 6 different vaccines <sup>(5)</sup>
Hungary	10	National Vaccine Plant	30	30+	Also locally developed shot <sup>(6)</sup>
Sri Lanka	8	Kelun Life Science – Sinovac	13	13	Saline Solution <sup>(7)</sup>
Laos	7	Laos Elemento Pharma – Stemirna	TBD	TBD	<sup>(8)</sup>

(1) Sinovac Technology transfer began 2021. Factory inaugurated 02/22.; plant functional 2023.

(2) Vaccines bottled, labelled, dispensed from plant in Savar. MOU signed 08/21; Beijing Bio-Institute of Biological products.

(3) Phase 3 trial to CoronaVac (up to age 17). Plant in Saldanha. Phase 3 trials September.

(4) President Fernandez and Sinopharm / Beijing Institute of Biological Products met to discuss 02/22.

(5) New plant to be built by end of 2023. In the interim currently have 14 million doses in storage.

(6) Goal is to make Hungary – self sufficient by hear end 2022 (announced 06/21).

(7) Production at the factory in Pallekele.

(8) Also include ASEAN clinical partner Tropical Health Network.

# BRI Vaccine Partnership Initiative

## *Chinese Vaccines International Production – Selected Other Countries Launched*

Country	Population (m)	Partners	COVID Vaccine Doses		Other Vaccines
			2022 (m)	2023+ (m)	
Egypt	106	VASCERA-Sinovac	100	1,200	Regional cold storage <sup>(1)</sup>
Algeria	45	Saidal Laboratories – Sinovac	96	96	To Africa <sup>(2)</sup>
Morocco	36	Recipharm (Sweden) – Sinopharm Sothema – Sinopharm	– 60	116 –	20 vaccines (3 COVID) <sup>(3)</sup>
Serbia	7	Hemopharm – Sinopharm	30	30	To EU <sup>(4)</sup>

(1) Production rate as at 02/22 operational 08/21. Plans to expand to 1 billion/yr lead in Africa.

(2) Commercial manufacturing 10/21.

(3) \$562 million plant inaugurated 01/22. Running by 2023. Funded by Government. 2022 doses manufactured elsewhere.

(4) Construction of 1<sup>st</sup> Chinese vaccine factory in EU started 09/21. Operational 04/22. Funded by China., UAE and Serbia (\$35 million).