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WHO/MPP mRNA Technology Transfer Programme
Regional meeting in South-East Asia

Shangri-la hotel, *Bangkok, Kingdom of Thailand*
31 Oct-1 Nov 2023

Agenda

Background

Announced on 21 June 2021, WHO and the Medicines Patent Pool established a Technology Transfer Programme for mRNA vaccines in South Africa, in order to build manufacturing capacity in LMICs to produce mRNA vaccines, in an effort to improve health security in LMICs through local and/or regional production of mRNA COVID-19 vaccines, as a primary target. The center for mRNA technology development and transfer comprises Afrigen/Biovac/South African Medical Research Council, South Africa, and will share technology and technical know-how with a network of technology recipients in LMICs. The Programme currently receives funding from European Commission, Belgium, France, Germany, as well as Canada, Norway, the African Union, South Africa and the ELMA foundation.
The mRNA Technology Transfer Programme has four main objectives:

1. Establish or enhance sustainable mRNA vaccine manufacturing capacity in regions with no or limited capacity;
2. Introduce new technologies in LMICs and promote regional research and development (R&D);
3. Strengthen regional biomanufacturing know-how and workforce development;
4. Develop regulatory capabilities and workforce to support and accelerate regional approval and distribution of mRNA vaccines;

Objectives of the meeting - The proposed objectives are to:

1) Promote R&D regional collaboration to advance mRNA product development around diseases of regional importance (e.g. dengue, malaria vivax, HPV, HFMD)
2) Share information on new discoveries to help design second-generation mRNA products.
3) Review intellectual property issues and regulatory aspects relevant to mRNA vaccines for diseases of regional importance.

AGENDA

Tuesday 31 October 2023

Time	Topic	Speaker
8:30 – 9:00	Registration	
9:00 – 9:15	Opening remarks Context for and objectives of the meeting	Martin Friede, WHO & Charles Gore, MPP
9:15 – 9:30	mRNA innovations for sustainability: establishing an enabling environment, 15 min	Petro Terblanche, Afrigen
9:30 – 10:00	*Coffee Break*	
Part I – Product Development for Sustainable Manufacturing		
I.1 mRNA vaccine development against dengue		Chaired by Manki Song, IVI
10:00 – 12:00	Clinical trial design and policy expectations for novel dengue vaccines, 15 min Designing a mRNA vaccine against dengue, key considerations, 30 min A mRNA tetravalent dengue vaccine : evidence from preclinical models, 15 min Product development plan for a mRNA dengue vaccine, 15 min R&D capacity in South-East Asia to advance dengue vaccine development, 45 min - Animal models - Assays - Clinical sites for clinical trials	Annelies Wilder-Smith, WHO Eugenia Ong, Duke-NUS Chutitorn Ketloy, Chula VRC Mainul Ahasan, Incepta Discussion moderated by Manki Song, IVI with speakers and audience
12.00 – 13.30	*Lunch*	
I.2 mRNA vaccine development against hand, foot and mouth disease (HFMD)		Chaired by Nguyen Van Trang, NIHE Vietnam
13:30– 15:00	Epidemiology of HFMD in South East Asia and key immunological considerations for vaccine development, 15 min Designing a mRNA vaccine against HFMD, key considerations, 15 min	Yoke-Fun Chan, Univ. Malaya Justin Chu, National University of Singapore

	R&D capacity in South-East Asia to advance HFMD vaccine development, 45 min - Animal models - Assays - Clinical sites for clinical trials	Discussion moderated by Nguyen Van Trang, NIHE Vietnam with speakers and audience
15:00– 15:30	*Coffee Break*	
I.3 mRNA vaccine development against malaria *P. vivax*		Chaired by Jestumon Sattabongkot, Mahidol vivax research unit
15.30 - 18:00	Epidemiology of malaria *vivax* in South East Asia and key immunological considerations for vaccine development, 15 min The role of human infection challenge models to advance P. *vivax* vaccine development, 15 min Lessons learned from *P.berghei* vaccine development: an mRNA vaccine adjuvanted with a NK-cell agonist against liver-stage malaria, 15 min Designing a mRNA vaccine against malaria *vivax*: key considerations, 30 min Product development plan for a mRNA *P.vivax* vaccine, 15 min R&D model to advance a P. vivax mRNA candidate vaccine: from discovery to clinical trial, 15 min R&D capacity in South-East Asia to advance vivax vaccine development, 45 min - Animal models - Assays - CHMI and parasite banking - Clinical sites for clinical trials	Rintis Noviyanti, Eijkman Institute for Molecular Biology James McCarthy – Wehi Institute Gavin Painter, Wellington Univ. of Victoria Herbert Opi, Burnet Institute Neni Nurainy, PT Bio Farma Dr Wanlapa Roobsong and Dr Nawapol Kunkeaw, Mahidol vivax research unit Moderated by Jetsumon Sattabongkot with speakers and audience
	COCKTAIL/DINNER	

Wednesday 1 November 2023

Time	Topic	Proposed speaker
I.4 Regional R&D capacity		Chaired by Martin Friede, WHO
9:00 – 10:10	**R&D capacity in South-East Asia** Additional R&D capacity to advance mRNA candidate vaccine. Each 10 min IP analysis in South East Asia, 10 min	Lisa Ng, A*STAR Alain Bouckenooghe, Hilleman Labs Manki Song, IVI Kiat Ruxrungtham, Chula VRC Suchinda Malaivijitnond, NPRCT-CU (remote) Amina Larbi, MPP
10.10 – 10.40	*Coffee Break*	
I.5 Considerations for HPV therapeutic vaccine development		
10:40 – 12:00	**HPV** mRNA therapeutic vaccine - Epidemiology and rationale for HPV therapeutic vaccine development, 15 min HPV mRNA vaccine design and preliminary insight, 15 min Panel Discussion, 30 min – Key R&D questions for HPV therapeutic vaccine development	Kiat Ruxrungtham, Chula VRC Eakachai Prompetchara and Supichcha Saithong, Chula VRC Peter Dull, BMGF (remote) Martin Friede, WHO Kiat Ruxrungtham, Chula VRC
12.00 – 13.30	*Lunch*	
Part II – Innovations for next-generation mRNA		Chaired by Kiat Ruxrungtham, Chula
II.1 – Key innovations to support 2nd generation mRNA technology		
13.30 - 15:30	BMGF strategy to advance mRNA vaccine R&D, 15 min Known unknows on mRNA innovations, 15 min Development of novel lipids, 30 min Nucleotide-modification for mRNA vaccines, evidence from in vitro and animal models, 15 min Plasmid design for mRNA production: key considerations, 15 min Panel Discussion, 30 min – Key research priorities to advance next-generation mRNA vaccines technology	Philippe-Alexandre Gilbert, BMGF Martin Friede, WHO Charles de Koning, Wits Univ. Patrick Arbuthnot, Wits Univ. Patrick Arbuthnot, Wits Univ. Speakers + Kiat Ruxrungtham, Chula VRC
15-30 – 15.50	*Coffee Break*	

II.2 - Innovations on mRNA production and manufacturing processes		
15:50 – 16:45	Introduction, 5 min Review of automated technologies for mRNA production, 15 min Update from the Wellcome LEAP R3 program and development of novel process for mRNA production, 20 min mRNA drugs production from very small to very large-scale capacity: when to use batch versus continuous strategies, 15 min	Martin Friede, WHO Ike James, MPP Duccio Medini, mSAC member José Castillo, Université Libre de Bruxelles/Univercells
16:45 – 17:00	*Closing Remarks, Next Steps*	WHO
17:00 – 18:30	**CLOSED SESSION – mSAC committee**	